AUGUST, 1939

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SALES-WINNING AROMATICS

• The value of the aromatics you use in your soaps can be judged by their effectiveness in creating sales. That means that the odors must not only be attractive and up-to-the-minute in style, but also of a character that keeps its freshness and charm.

The value of Givaudan aromatics can be judged by the growing number of soap manufacturers who are using them to create sales—and to hold the customers who buy their products. Our staff is always ready to give you expert cooperation in adapting the never-ending supply of new and interesting aromatics that are brought forth by Givaudan research.

Givaudan

DELAWANNA, INC.
80 FIFTH AVENUE, NEW YORK, N. Y.

and Sanitary Chemicals

For better Soap-

USE THESE QUALITY PRODUCTS

DIAMOND ALKALI CO.

58% LIGHT SODA ASH
58% LIGHT FLUFFY SODA ASH
DIAMOND SODA CRYSTALS
76% CAUSTIC SODA (SOLID & FLAKE)
LIQUID CAUSTIC SODA

STANDARD SILICATE DIV.

SILICATE OF SODA, LIQUID
SILICATE OF SODA, GLASS
SODIUM METASILICATE
SILICATED ALKALIES

ALKALI

S-4

DIAMOND ALKALI COMPANY, PITTSBURGH & EVERYWHERE

The WORLD'S FAIR enouqh

The world always recognizes honest value and honest effort to produce the best. Fuld products bow in acceptance of the honored place that leading supply dealers have given them.

ROACH DUSTER

The new Fuld Duster Package is loaded with one pound of Fuld's 95% active Roach Powder. It's the shortest, quickest way to fewer roaches and more sales. The Duster Package forces the powder into crevices, and when the dust settles,—so do the roaches.

Chlorozif KILLS GERM ODORS

Chlorozif is the powerful liquid deodorant that completely destroys most household odors at their source. Its chemical action on putrefactive matter is permanent, giving prolonged safety and relief.

SCRUB SOAPS

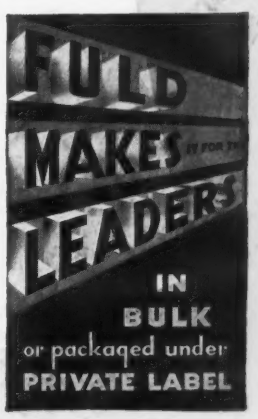
Let a sample of Fuld's oil soaps show you why leading scrubbers like their results. Fuld's Oil Soaps made by the improved exothermic process are conditioned to the peak of cleaning activity—neutrally balanced and guaranteed for pure soap concentration.

25% — 35% — 45% — 65%
Grades

Surface and Penetrating SEALS

Your Fuld floor maintenance line is complete for every type of flooring material and condition. Obtain our latest recommendation for

WOOD
LINOLEUM
GYMNASIUMS



Selling.. Jobbers ONLY!

DEODORANT BLOCKS
LIQUID DEODORANTS
LIQUID CLEANERS
LIQUID SOAPS
OIL SOAPS
INSECTICIDES
DISINFECTANTS
SELF POLISHING WAXES
PASTE WAXES

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What's the Answer?

PUT IT IN CANS!

*M*ighty sound advice from your claim adjuster, a practical man who realizes the importance of safe packaging—that's why he suggests cans.

Day in and day out he sees the advantages of cans—their sturdiness that prevents breakage—their lighter weight which means lower shipping costs and easier handling.

What he may not realize is that in addition, cans offer greater display value and wider salability due to consumer convenience in usage.

Consider these factors—then judge for yourself whether your product wouldn't be better packaged in a quality can—made by Continental!

C

There is hardly a product that wouldn't be more acceptable packaged in a can—although "knowing how" may sometimes be a matter of laboratory research or package design.

Continental offers complete facilities for determining your needs. Call upon us anytime.

CONTINENTAL CAN COMPANY

NEW YORK · CHICAGO · SAN FRANCISCO · MONTREAL · TORONTO · HAVANA

Soap and Sanitary Chemicals

Volume XV
Number 8

AUGUST
1939

●

MEMBER AUDIT BUREAU OF CIRCULATIONS

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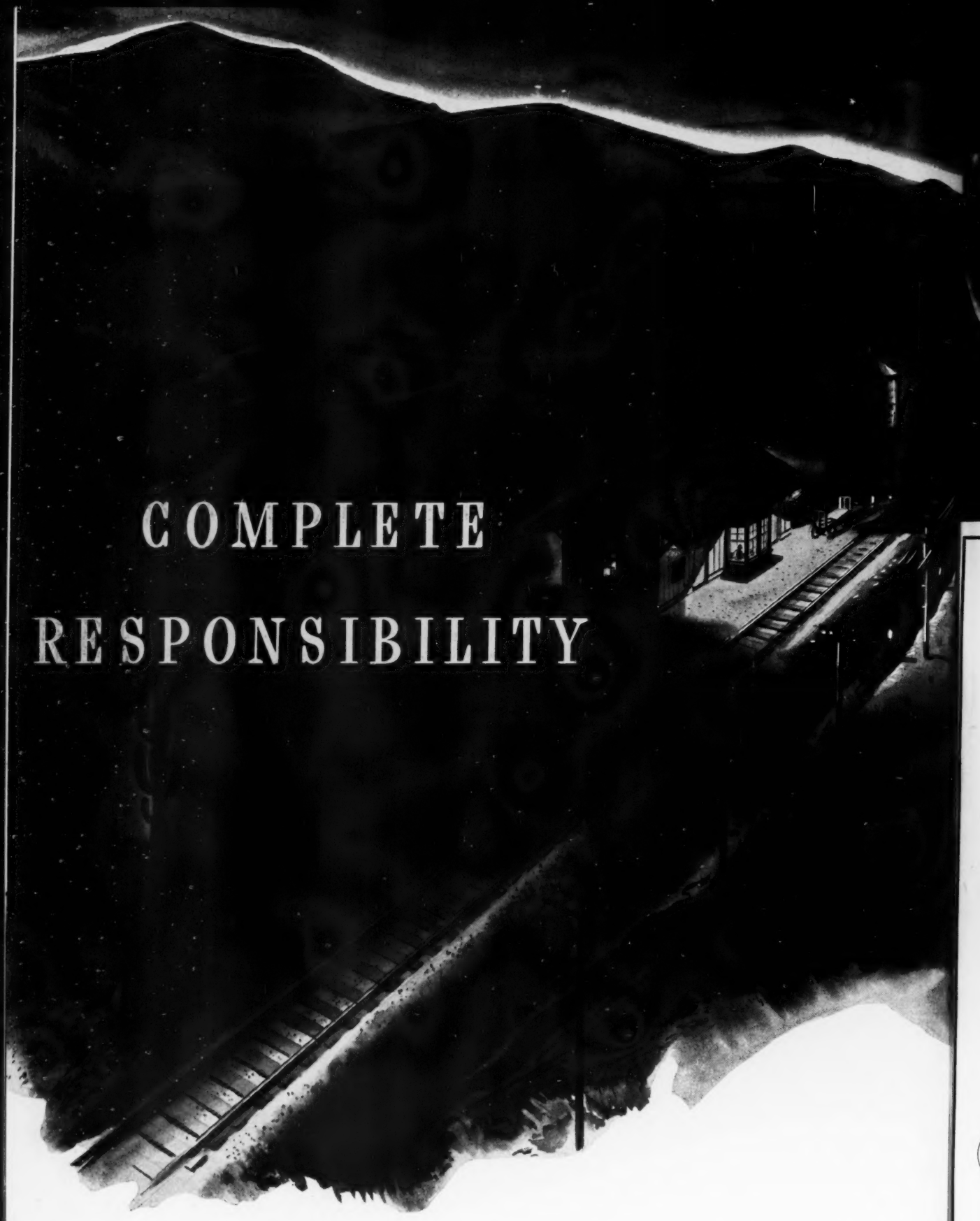
Published by

MAC NAIR-DORLAND COMPANY, INC.
254 WEST 31st STREET NEW YORK, N. Y.

Subscription rate, $3.00 per year. Foreign, including Canadian, $4.00. Copy closing dates—22nd of month preceding month of issue for reading matter and 10th of month preceding month of issue for display advertising. Reentered as second-class matter, Feb. 9, 1938, at Post Office, New York, under act of March 3, 1879. Mail circulation, July, 1939, issue, 3,956 copies. Total distribution, 4,300.



COMPLETE RESPONSIBILITY

● **Beyond either horizon—past the point where those ribbons of glistening steel meet the sky—are the borders of his domain. Within these borders, alone stationmaster accepts *Complete Responsibility* for the safety of everything that rolls over his tracks.**

● Complete, undivided responsibility is just as important in selecting a source for your container and closure requirements as it is in dispatching trains or running a battle fleet.

Anchor Hocking is thoroughly equipped, reliable and capable of accepting complete responsibility for your packaging requirements—from container to closure to carton.

All in all, Anchor Hocking is simply this—*a good outfit to do business with.*

Here at Anchor Hocking—backing up the trained salesman who calls on you—is every modern facility for serving you better. Experts on every phase of packaging . . . research . . . engineering . . . designers . . . and merchandising experts, are at your beck and call. These services are yours, without the slightest obligation. Bring in your problems, we're sure we can bring back the answer. A letter or phone call means action at Anchor Hocking.

ANCHOR HOCKING PRODUCTS AND SERVICES

P & P WARE
FOOD CONTAINERS
LIQUOR & WINE BOTTLES
BEER AND BEVERAGE BOTTLES
THIN-BLOWN PACKERS' TUMBLERS
GLASS PREMIUM WARE
TABLEWARE
HOTEL, BAR & RESTAURANT WARE
GLASS FOR INDUSTRIAL USES

★ ★ ★

CLOSURES: *metal and molded; air-tight and vacuum; friction, screw and lug types*

AMERSEAL NOZZLES—*for cans containing liquids*
AMERSEAL BOXES—*for waxes, pastes and semi-solids*
SEALING MACHINES; *hand, foot and semi-automatic types*
PROCESSING EQUIPMENT; *for processing glass-packed products*

★ ★ ★

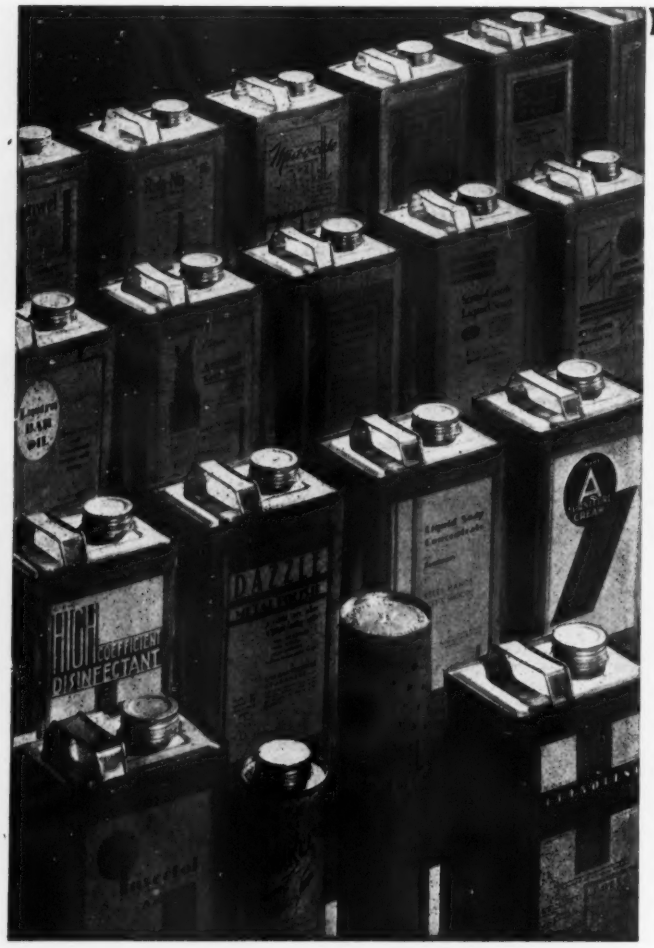
RESEARCH & ENGINEERING STAFF
EXPERIMENTAL & TESTING LABORATORIES
DESIGN SERVICE

ANCHOR HOCKING GLASS CORPORATION, Lancaster, Ohio
Closure Division: ANCHOR CAP & CLOSURE CORPORATION, Long Island City, N. Y. and Toronto, Canada

ANCHOR HOCKING GLASS CAPS
-an unbeatable combination

Illustrated are two of Anchor Hocking's popular line of Magnesia Ovals available in a complete line of sizes. These bottles are sealed with Anchor Improved C. T. Caps.

YOUR LINE



Now it is possible for you to build up a sales following with products identified exclusively with YOUR NAME!

Buy the Clifton Quality Line and repack it under your own name. Our attractive labels and leaflets will stimulate your sales into the Profit Division. (The Clifton Line has been doing just that for wide-awake jobbers since 1914.)

And our prices must be quoted to be enjoyed.

featuring

★ **QUALITY**
★ **PRICE**
★ **SERVICE**

CLIFTON CHEMICAL CO., INC.

246 FRONT STREET NEW YORK, N. Y.

Semi-Castile Liquid Soap
Foamwel Liquid Soap
Liquid Soap Base
Liquid Soap Dispensers
Cresolene Disinfectant
Bar Oil

Pine Scrub
Deodorizing Sprinklets
Oil Soaps
Mopping Varnish
Rubless Wax

Furniture Cream
Insect Killer
Coal Tar Disinfectant
Pine Disinfectant
Theatre Spray

A little out of the ordinary

It isn't often that we have a problem like perfuming the Mall of the New York World's Fair, but we have also satisfactorily solved, for many manufacturers, many perfuming problems equally important altho perhaps less spectacular.

VAN AMERINGEN-HAEBLER, INC.
315 Fourth Avenue
NEW YORK CITY

PQ SILICATES TAKE THE DIRT OUT AND KEEP IT OUT.

Redeposition Test: Into 0.4% solutions —one soda ash, the other PQ Silicate— were placed an iron oxide saturated cloth and a clean piece of cloth. After agitating, rinsing and drying: Left, pieces from soda ash solution; Right, from PQ Silicate solution. Compare whiteness of lower samples.

Streamlined

DIRT REMOVAL

THE SILICA in PQ Silicates improves the detergent power of your cleaners and soaps: You know it's just as important to keep dirt from re-attaching itself to surfaces being cleaned as it is to remove the soil in the first place. The protection given by PQ Silicates in this respect was early discovered in our laboratories and since has been confirmed by numerous research workers, as well as in actual practice.

You can easily demonstrate the function of the silica in PQ Silicates by the simple experiment illustrated. Ask for the details as well as for a copy of Bulletin "The Role of Silica in Soluble Silicate Cleansers".

PHILADELPHIA QUARTZ COMPANY

General Offices: 125 S. Third St., Philadelphia. Eight convenient plants.
Chicago Sales Office: 205 W. Wacker Dr. Sold in Canada by National Silicates, Ltd.

PQ SILICATES OF SODA

A PRODUCT THAT IMPROVES SOAP

GENERAL CHEMICAL TETRASODIUM PYROPHOSPHATE

ANHYDROUS

As an ingredient in the manufacture of soap, General Chemical Tetrasodium Pyrophosphate imparts to the soap several highly desirable qualities that have been long sought after by soap makers. Here are only a few of these qualities:

1. It removes dirt quickly *and holds it in suspension!*
2. It helps prevent formation of "rings."
3. It helps build more abundant suds.
4. It is "proof" against iron salts in water.
5. It tends to prevent streaking on glass or glassware.
6. It is an ideal ingredient for soaps that are used in machine washers since it has a strong tendency to prevent scale formation.

GENERAL CHEMICAL COMPANY

Executive Offices: 40 RECTOR STREET, NEW YORK, N. Y.

REPACKERS! DIAMOND GRADE GIVES YOU THESE ADVANTAGES!

1. Diamond grade is made in small thin flakes . . . the right size to prevent segregation in the package.
2. Diamond Grade particles are the right size to give a uniform and intimate mix with other compounding agents.
3. Diamond Grade dissolves quicker than other forms—it does not "bunch up" when the compound is poured into water.

GENERAL CHEMICAL COMPANY, 40 Rector Street, New York, N. Y.

Gentlemen: Please send me additional information on grades of General Chemical Tetrasodium Pyrophosphate.

Name.....

Company.....

Street.....

City.....*State*.....

Manufacturer.....*Repacker*.....S-839

AQUAROMES

Note the clarity of the water solution of Felton Aquaromes on the left in comparison with an ordinary water soluble perfume oil.

WATER SOLUBLE PERFUME OILS

Completely soluble in water . . . AQUAROMES leave no trace of oil film or cloudiness, and lastingly and economically perfume a large variety of products, such as:

- Liquid soaps
- Theatre sprays
- Liquid shampoos
- Formaldehyde sprays
- Deodorant sprays
- Window cleaning fluids

and many others

You have a large selection of popular fragrances to choose from . . . and a test quickly demonstrates why so many manufacturers are advantageously using AQUAROMES in preference to the usual water soluble perfume oils on the market.

WRITE FOR TESTING SAMPLE,

or better still, send a sample of the preparation you wish perfumed and our laboratories will recommend the best item for the purpose!

Manufacturers of AROMATIC CHEMICALS, NATURAL DERIVATIVES, PERFUME OILS, ARTIFICIAL FLOWER AND FLAVOR OILS.

FELTON Quality

FELTON
CHEMICAL COMPANY, INC.
603 Johnson Ave., Brooklyn, N. Y.

STOCKS CARRIED IN PRINCIPAL CITIES

Build Business on Quality Lines . . .

4 Liquid Floor Soaps

TO MEET YOUR CUSTOMERS' DEMANDS

DAVIES-YOUNG PRODUCTS

BUCKEYE LIQUID SCRUBBING SOAPS

(Plain, Pine or Sassafras.) For all surfaces that require a good NEUTRAL soap. Made from a combination of freshly pressed vegetable oils. Contain a high concentration of soap value. Leave no film on terrazzo or tile.

SANI-SCRUB LIQUID FLOOR SOAPS

(Plain, Pine or Sassafras.) Heavy-bodied liquid scrubbing soaps containing a slight excess of a modified alkali. Developed particularly for rubber, rubber tile, asphalt tile, composition, mastic and cement. Slight alkalinity not only gives increased cleaning action—but also prevents colors from running.

FLOREX (Pine or Sassafras)

Really a liquid detergent; carries a slight excess of modified alkalies. Lower in soap content than SANI-SCRUB; recommended for same type of floors.

EX-ALK LIQUID CLEANER

(Pine or Sassafras.) For all floors, and general purpose cleaning. It is non-alkaline, and neutralizes alkali, thus controlling the alkalinity of the cleaning solution. Heavy suds clean with gentle, thorough action, harmless to any surface that will stand washing with clear water.

Liquid floor soaps (scrubbing soaps) are widely used today because of their ease of handling, immediate and complete solubility in water, and effective cleaning properties. These four Davies-Young soaps are each specifically compounded for certain types of floors. (Buildings having more than one type of flooring often require several different cleaners to maintain them properly and economically.) Build up your business by recommending and selling *the right cleaner for the right surface.*

MAIL TODAY FOR SAMPLES AND PRICES

The Davies-Young Soap Co.
Dayton, Ohio

Please mail samples and prices of your Four Liquid Scrubbing Soaps.

NAME_____

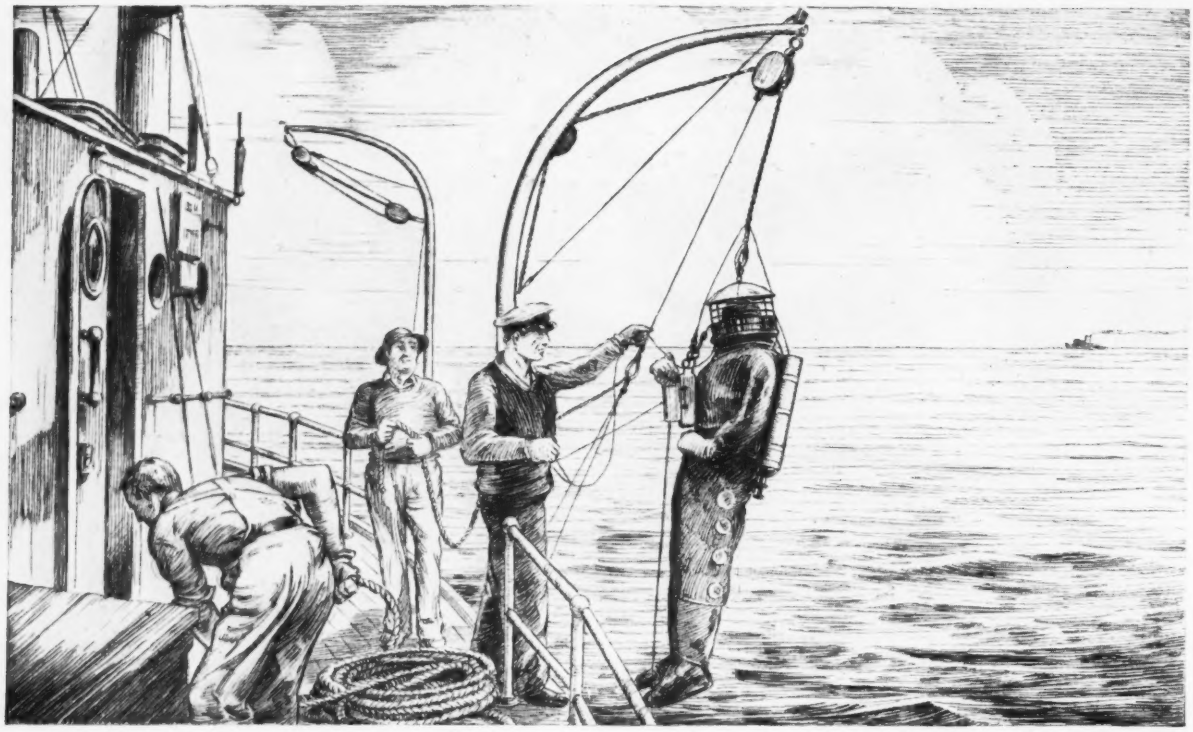
ADDRESS_____

CITY AND STATE_____

THE DAVIES-YOUNG SOAP CO.,
DAYTON, OHIO SOAPS FOR EVERY PURPOSE; FLOOR WAXES, SANITARY SUPPLIES

Copyright 1939, The Davies-Young Soap Co.

INTERESTING USES OF ALKALIES



MAKING DEEP SEA DIVING SAFER

ONE OF THE latest novel uses of Caustic Soda is for purifying helium gas which deep sea divers now often use in the artificial "air" they breathe. Helium is preferred to the nitrogen of natural air because it diffuses readily in the blood, permitting less time for safe "decompression" when coming up from great depths. Using a mixture of 80% helium and 20% oxygen, with a self-contained diving dress of his own invention, Mr. Max Nohl in 1937, made a record dive of 420 feet. Helium was used by divers in connection with the Squalus and other submarine rescue and salvage work.

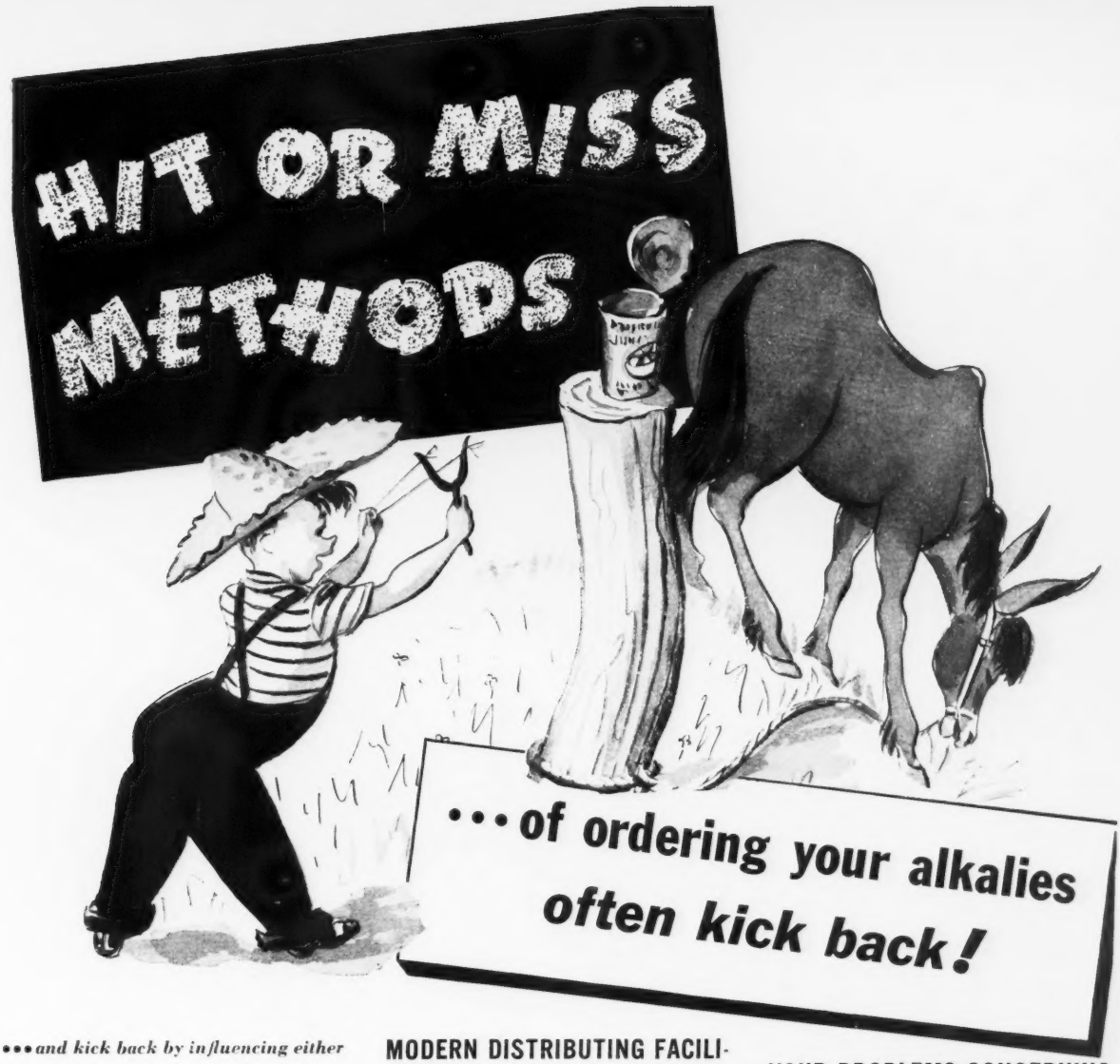
The helium thus used must first be freed from impurities. Caustic Soda does that, "scrubbing" the crude gas as it comes from the ground, to absorb the CO_2 in same. The material is then run through a lime solution to remove the Caustic. The temperature is then lowered by degrees on the remaining gas, by cycling it until all the gases are liquefied with the exception of nitrogen and crude helium. This residue is then recycled until the nitrogen is liquefied and a product containing 98.2 to 98.4% helium is then left.

COLUMBIA Caustic Soda itself enjoys similar degrees of purity. Known throughout industry as a 98-100% product it is a favorite with users who insist on uniform highest quality. So, too, are other COLUMBIA products, which have set the standard for quality. Thus, important raw materials help to maintain high quality standard in finished products in the glass, paper, chemical, soap, textile, food or drug industries.

COLUMBIA

SODA ASH • CAUSTIC SODA • SODIUM BICARBONATE • • •
MODIFIED SODAS • LIQUID CHLORINE • CALCIUM CHLORIDE

THE COLUMBIA ALKALI CORPORATION
BARBERTON, OHIO
NEW YORK • CHICAGO • BOSTON • ST. LOUIS • PITTSBURGH • CINCINNATI • CLEVELAND • MINNEAPOLIS • PHILADELPHIA



•••and kick back by influencing either the quality or the cost of your product.

When you use Solvay Alkalies, you can depend on their high quality . . . depend on their constant uniformity at all times. Here are a few other dependable points to consider before you place your order for alkalies.

THE RIGHT TYPE OF PRODUCT FOR THE JOB . . . Solvay Alkalies are made in various forms to meet specific manufacturing requirements. The Solvay Products book will give you complete information on types and strengths of Solvay products.

UNIFORM QUALITY . . . Only most modern and scientific manufacturing methods are used in making Solvay products—assuring uniform quality standards in Solvay products *every time you receive them.*

MODERN DISTRIBUTING FACILITIES . . . Three of America's largest alkali plants, located in important industrial centers and over 100 stock points assure prompt delivery and efficient routing of your orders for Solvay Alkalies.

YOUR PROBLEMS CONCERNING THE USE OF ALKALIES ARE SOLVAY'S . . . Solvay Technical and Engineering Service Division will help you get the most from your alkalies. Write to

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET NEW YORK, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Indianapolis
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

SOLVAY SALES CORPORATION, 40 Rector St., New York, N. Y.

Please send me a copy of the Solvay Products Book.

*Name*_____

*Firm*_____

*Address*_____

*City*_____ *State*_____

*Repacker*_____ *Manufacturer*_____ AJ-8

HYDROXY CITRONELLAL SPECIAL

Stability in Soap and Cosmetic Perfumes is assured by the use of HYDROXY CITRONELLAL SPECIAL.

The fact that ordinary Hydroxy Citronellal turns rancid in time has long been a drawback. This new product remains stable indefinitely.

The odor you incorporate in your product is of no greater value to you than its condition on reaching the ultimate consumer.

Considering the fact that HYDROXY CITRONELLAL SPECIAL . . . because of its stability . . . is no more costly in the long run than the ordinary grade, it is readily understandable why some of the largest users of the product have adopted it.

Requests for samples on your firm's letterhead will be promptly answered.

Agfa

AROMATICS DIVISION
GENERAL DRUG COMPANY

170 Varick Street, New York - Transportation Bldg., Los Angeles, Cal.
9 S. Clinton St., Chicago, Illinois - 907 Elliott St., West, Windsor, Ont.

A reprint of this drawing, "Down to See the 5:40", on special paper, without advertising, sent on request.

A RING-TAILED TOOTER IN ITS TIME

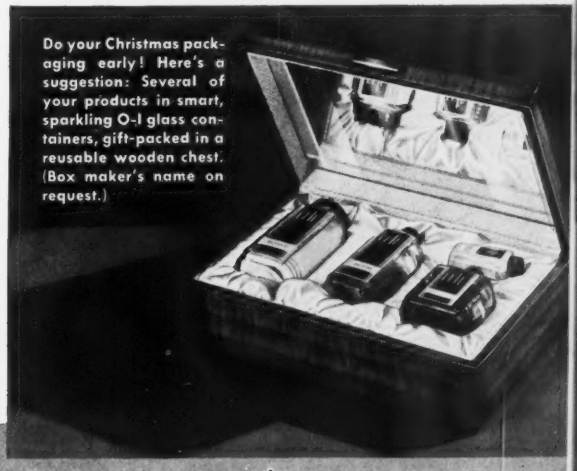
but modern light-weight Streamliners meet TODAY'S *needs*

Railroads still sell transportation. But today they sell speedier transportation in a new "package"— sleek streamliners, more convenient and cleaner to ride in, more pleasing to the eye.

Every business must constantly improve—or perish!

You may or may not be able to improve your product. But the chances are we can help you improve your package. Cut its weight, perhaps, to trim shipping costs. Make it more convenient to use. Give it modern beauty and more eye-appeal.

A new glass package for your product may be the spark needed to kindle anew the enthusiasm of salesmen and dealers. Our Packaging Research Division will help you develop it,— considering practical packing operations and consumer buying habits. Talk it over with an Owens-Illinois representative. You will find him keenly interested in your problems and eager to serve you. Owens-Illinois Glass Company, Toledo, Ohio.



Do your Christmas packaging early! Here's a suggestion: Several of your products in smart, sparkling O-I glass containers, gift-packed in a reusable wooden chest. (Box maker's name on request.)

OWENS-ILLINOIS

GLASS COMPANY

First in Glass

VISIT THE GLASS CENTER 1939 NEW YORK WORLD'S FAIR

$100,000.00

WORTH of DRAWINGS, PATTERNS, JIGS, and other accessories assure accurate and economical construction of JONES PRESSES.

THIS EQUIPMENT **accounts for the fact that**

JONES TOGGLE PRESSES

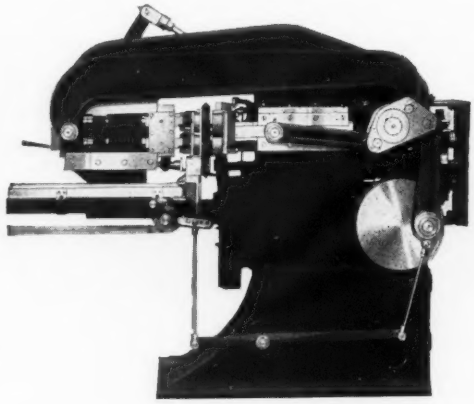
(USED THE WORLD AROUND)

GIVE UNIVERSAL SATISFACTION

THIS EQUIPMENT guarantees accurate alignment of dies, and noiseless, vibrationless and long-lasting presses.

THIS EQUIPMENT enables us to produce presses at a price so reasonable that they return their cost to users in twelve months or less.

THIS EQUIPMENT enables us to make presses so efficient and dependable that they produce better looking and more salable soap than is possible by any other means.



Type K Laundry Soap Press

R. A. JONES & CO., Inc.

P. O. Box 485 Cincinnati, Ohio

The Standardized *Constant Motion Cartoner* packages, bottles, jars, tins, collapsible tubes and many other articles. It feeds, folds and inserts direction sheets and corrugated board liners with the loads.

As the Editor sees it..

THE current activity of the Federal Trade Commission under the Wheeler-Lea Act should serve as a warning to manufacturers that times have changed in the matters of advertising and label claims. Statements which many manufacturers have been using on their labels and in their advertising for as long as thirty and forty years past are now being challenged by the Commission. "Prove it," says the F.T.C. And the burden of proof is on the manufacturer. The law says so and it must be so!

If we were a manufacturer, large or small, we would not wait until the Commission pointed its finger in our direction. We would go into a huddle with our label and advertising claims, and study them in the light of various and sundry published facts taken from recent complaints under the Wheeler-Lea Act. Can you substantiate each and every claim made, both stated and implied? If not, we suggest that the necessary proof be checked up, or consideration be given to dropping or modifying the claim.

To avoid conflict with this comparatively new law, which is only now beginning to display its teeth under the whip of practical enforcement, appears the part of wisdom. Too many manufacturers are not familiar enough with its provisions. Better it is to learn now and make the necessary revisions, rather than after being told to do so by the F.T.C. For it is believed that the activities of the Commission under the law will be more farreaching as time goes on. And until there comes a court decision to the contrary,—and this may never be,—the powers of the Commission under this law are very, very wide.

AND not only does the Wheeler-Lea Act loom larger in the average manufacturer's picture as time goes on. The next two or three years will probably see much uncertainty in regard to label and advertising claims under other new federal and state laws. At least that length of time, if not longer, will be required to straighten out numerous conflicts and errors arising out of enforcement of the new Federal Food, Drug, & Cosmetic Act and new state laws simultaneously with the enforcement of laws which have been on the books for some time past. When, where, and how will the various laws apply? What of specific conflicts and contradictions? Manufacturers are going to have no easy time of it, and enforcement officials will find themselves rivaling the one-armed paper hanger with the itch. But there is little else that could be expected when we consider the way in which the legislative pot has been boiling during the past year or two.

Manufacturers might as well get used to the new order of things as soon as possible. Ultra-conservatism in label wording will be a wise policy until such time as something more liberal is definitely accepted on all sides.

IN A publicity release, Macy's, New York department store, outlines how its various buyers are instructed to treat salesmen for the 19,000 manufacturers and other from whom the store buys goods in the course of the year. Many of the dirty tricks which buyers so frequently pull on salesmen to get a better deal or a lower

price are banned specifically, — passing confidential information and samples from one manufacturer to another, revealing prices under like conditions, and deliberately misquoting competitors' prices, forcing a salesman to show a competitor's order, unjust cancellation of orders, obtaining quotations on large lots and trying to buy small lots at the same price, and so forth. The code concludes with the suggestion that buyers treat all sellers as they, the buyers, would like to be treated if they were selling and the other fellow were buying.

This plain statement of policy by this large department store is significant mostly in that it is a hallmark of our changing times. Really smart purchasing agents never have treated salesmen as dirt beneath their feet,—as was often the case with buyers of the old school. The shifty, tricky buyer is still with us, but to a lesser extent as times goes on,—and as a consequence, the efficiency of purchasing methods shows constant improvement. The accepted purchasing agent pattern of today bears little resemblance to that of the Gay Nineties. The fair, friendly buyer buys better in nine times out of ten, secures and holds the confidence of his suppliers, and is invariably a better man for his employers.

AMERICAN whaling continues to fight for its place in the sun,—and is opposed vigorously by tallow rendering and dairy interests. Whale oil produced on American-owned floating factories, but from whales captured by foreign "killer boats" is classed as foreign oil and is taxed accordingly. This is the tax which American whaling interests want eliminated until such time as a suitable fleet of American killer boats and crews may be built up. It does not seem like an unreasonable request, but in common with every other attempt to bring into the country tax free any fat or oil not actually produced here, the powerful group of domestic fat producers has opposed the free admission of whale oil.

Arguments on both sides have been encompassed with considerable flag waving and name calling, and the true reasons behind the fight pretty much smothered in words. Large fat users want whale oil to come in free because it will give them a good tonnage of low-cost raw material. Domestic fat producers do not want this cheap oil to come in as they fear it will hurt their markets and encourage lower fat prices.

Self-interest stands squarely behind the efforts of both sides in this controversy. As a consequence, the fervid pronouncements of lobbyists dressed as patriots do not ring altogether true. As everybody knows, the side with the biggest pull in Washington invariably wins irrespective of arguments, including flag waving. Certainly, free whale oil under current conditions is completely logical economically, —but of what consequence is this fact when most of the practical considerations involved are chiefly political?

REQUIREMENT of trade-mark registration by states is "close to being legalized banditry," according to "Printers' Ink." What do they mean by "close?" It **is** legalized banditry, the finest little hold-up scheme to extract cash from out-of-state manufacturers which ever came down the pike,—and the fact that some state legislators will stoop to taxation of this character is a rather definite criterion, in our opinion, of the calibre of too many of those who sit in our state legislatures. If there is a single genuine need for any state trade-mark legislation,—outside of an excuse to raise funds by soaking out-of-state manufacturers, and not touching the pocketbooks of the local voters,—we must admit our inability to see it.

FATTY ACIDS for the Soap Industry

By Dr. J. Davidsohn and A. Davidsohn
Haifa, Palestine

DURING the past few years, the development of synthetic fatty acids has become potentially an important factor in the world fat markets, especially in Germany where tightness of fatty raw materials has led to the commercial production of synthetic fatty acids especially for soap manufacture. The object, naturally, is to conserve natural oils and fats to as great an extent as possible for food uses. It is interesting, therefore, before discussing fatty acids for soap, to give some of the details in the synthesis of fatty acids, and thereafter to deal briefly with the recent developments in the distillation of fatty acids. First the record of the development of fatty acid synthesis will be outlined.[1]

1884—Proposal of Schaal to produce fatty acids by oxidation of paraffin.

1921—Beginning of works in I. G. Farbenindustrie.

1926—Establishment of an experimental plant in Oppau.

1928-30—Supply of some German soap works with synthetic fatty acids from I. G.

1928—Beginning of the production of synthetic fats and the test trials with such products as animal food in Oppau.

1931—Establishment of a 3 tons-per-day-plant at Baton Rouge, La., U.S.A. (I. G. in connection with Standard Oil of Louisiana.)

1932—Discovery of the oxidation process, which is now worked in Germany by I.G. and use

[1] G. Wietzel, *Zeitschrift fur angewandte Chemie*, 1938, No. 32.

of this process in an experimental plant of I.G.

About 1934 beginning of work by the partnership of I.G. and the Deutsche Fettsauren Werke (D.F.W.).

1937—Working of the industrial plant of the D.F.W.

1938—Agreement between I.G. and D.F.W.

Wietzel is apparently right in his statement that the most important process of synthesis of fatty acids is the oxidation of paraffins. The main features of this process are worked in two sections; 1. Oxidation of the paraffin itself, and 2. Working up of the oxidation products. The working of the first section is done by the introduction of fine dispersed air within the raw material at low temperature (80-120°C), the use of certain catalysts, and a careful regulation of the oxidation. The aim of second processing is directed towards separation of the unoxidized paraffin and neutral oxidation products from the saponifiable materials by means of saponification. From this soap, the unsaponified material is extracted by solvents or by direct distillation of the unsaponified material. The last named process also produces a conversion of the non-suitable and injurious oxy-fatty-acids and consequently an improvement of the saponifiable products. The crude soaps thus produced are split and the resulting crude fatty acids are carefully distilled in order to separate the suitable fatty acids from fatty acids of a too short or a too long carbon chain. This is the I.G. process, which is being worked to-day in Germany.

The full technical details cannot possibly be described here. In addition, this process from an economical point of view is not practicable in countries with sufficient resources of fatty raw materials. Under any conditions, the economic value of the process (even taken into account the improvements by the British patent 489,443, Henkel) is regarded by some as rather doubtful. Let us quote only the opinion of Rex Furness[2]. Also, from Henkel's patent it may be calculated, that a maximum of one ton of fatty acids (still requiring fractional distillation with a yield of soap-making fatty acids of 50-80 per cent), is produced from 10 tons of hydrocarbons undergoing oxidation at 115 during 24 hours. Exact cost calculations cannot, of course, be attempted in this brief analysis, but the following points demand consideration, the basis being 1 ton of crude fatty acids:

(1) Even with the return of unoxidized hydrocarbons to the process, it is difficult to see more than a 50 per cent gross yield on the hydrocarbons consumed.

(2) 25,000 cu. ft. of air per hour must be circulated for 24 hours.

(3) The centrifugal separation of the soap solution and the unoxidized hydrocarbons demand high-powered apparatus.

(4) A quarter ton of caustic soda is required, and about 0.7 ton of water must be evaporated prior to the extraction of the dried soap.

(5) The extraction of the dried soap for the removal of unsaponifiable material entails the treatment of 2 tons of material.

(6) The fractional distillation of the fatty acids liberated from the extracted soap by means of mineral acid in a costly operation.

Apart from the high power charges upon the process, it will be apparent to those with experience in extraction and distillation technique that large costs are involved in the use and recovery of volatile solvents, at least, several pounds sterling per ton of fatty acids ultimately produced. Similarly, fractional distillation of fatty acids is costly. Hetzer[3] estimates the costs of splitting and distilling acids from a number of the more common fats to be between $50 and $65 per ton.

Similar processes are by the way used in Soviet Russia. The economical side of these processes is rather doubtful too. Anyhow there is some ground to hope that these processes can in future be developed technically to a level of economic costs. Otherwise there is no good reason why a country like the United States should undertake research in this direction such as that by Standard Oil of Louisiana.

As modern developments in the chemical industry make it possible to use carbon as the initial material for paraffins, we may regard carbon as an initial material for fatty acids as well. In a popular treatise published in Germany[4] appeared a very neat scheme of "Soaps from Carbon", the simplicity of which, however, did not reveal the economic problems connected with the processes involved. It may be mentioned in addition, that the oxidation plant must be constructed with high cost corrosion resistant steel.

Below a short description is given of the process of the Deutsche Hydrierwerke A.-G. (British patent 492,595). It is known that olefinic hydrocarbons of chain lengths comparable to those of soapmaking fatty acids exist in Fisher-Tropsch synthetic oils, in the fractions of petroleum gas oils boiling between 200° and 325°C. (70 per cent olefines) and in the fractions boiling between 200°-350°C. of lignite tar oil. By oxidation (with hydrogen peroxide, permanganate, etc.) glycols are produced, which, when fused with caustic soda, are converted into soaps. That this process is impracticable under normal conditions is evident and we therefore dispense with a quotation of the statements given by Rex Furness. The synthesis of fatty acid from sugar by means of yeast fungus (*endomynis vernalis*) may only be mentioned. The experiments are, so far, scientific, and not yet practicably workable.

REFINING of fatty acids is today of great importance. The distillation of fatty acids has become a very important industry especially in Germany, as Germany wants to work up, if possible, only fatty acids to soaps in order to recover all glycerine. Fatty acids, produced by splitting processes are not directly suitable for high grade

[2] *The Industrial Chemist*, 1939, No. 1.

[3] *Seifensieder Zeitung* 1937, pp. 608, 631, 664.

[4] *Gerhardt-Hoffner, Deutsche Roh-und Werkstoffe*, 1937.

soaps.[5] Produced thus are only crude fatty acids, which must be refined by distillation. Recent developments in the distillation of fatty acids have led to considerable reduction of still residues and likewise to a more careful treatment of raw materials during the distillation process. The results are more satisfactory from the economic point of view, and the final products are of much improved quality.

Some ten years or so ago the distillation was carried on as follows: A large amount of crude fatty acids is heated with direct fire or with hot water in pressure tubes (Frederking-System). During the heating process, steam is injected. After some hours the contents of this distilling vessel are only partly distilled. Part neutral fat as well as unsaponifiable materials and the color stuffs, also a considerable part of the fatty acids themselves, were left behind in the pitch. This, so-called "stearine pitch" has a much lower market value than the distilled fatty acids. As this process involves the crude fatty acids remaining for many hours in the distilling vessel, it was to be expected that the amount of pitch was high. It was evident that this process of distillation of fatty acids from acid neutral oil or from soapstock-fatty acids with a large percentage of neutral oils could not be worked economically, as the remaining neutral fat was badly broken down in the distilling vessel.

Technical improvements aimed to prevent deficiencies of this kind. Principally, the improvements were made in three directions[6]. 1. By reducing the pressure in the distillation plant, thus the temperature can be lowered, which effect is produced by vacuum, intensive cooling during the condensation and forcing steam through injectors into the distilling vessel. 2. By vacuum and transformation of the steam for distillation. According to this process, steam with low tension works in the fat material in high vacuum. This process is known as the Wecker-Process. (German patent 347.828). 3. By high dispersion of the fat material during the distillation. One of these processes is the process of Kubierschky (German patent 347,828), who was the first to propose a continuous distillation in a column.

But the all practical results were not satisfactory. The process of Heller working under principle 3 is generally used today successfully. This process is worked mostly not in a high vacuum, nor does it use especially "transformed" steam. Instead it works continuously with superheated steam, the temperature of which must not be higher than that of the fatty acids in the distilling plant. By this process a quick and uniform distillation is achieved. Besides a mention shall be made of the improvement of the Imperial Chemical Industries (ICI), (German patent 673,877) of which only the main features are given. The fat material is distributed over the surface of a heated moving area in a thin layer. The condensed material precipitates on another moving cooled area, which is moving in an opposite direction to the heated area within a distance of 1-5 cm. The residue and the condensed material are taken from both surfaces separately. Thus this process works according to the third principle.

J. Hetzer[7] in a German trade paper reports in general about the expenses of the distillation of fatty acids. Production costs of fatty acids are according to Heller approximately $3.00 to $4.50 (10-15 Reichsmark) per ton, and according to Hetzer between $6.50 and $10.00 (16-25 Reichsmark), corresponding to the raw material used and the amount of one charge, if 84-90 per cent of the crude fatty acids should be obtained from the distillation.

IN the use of fatty acids for the manufacture of soap, it can be said, that all processes of soap manufacture can be used, the cold process alone excepted. As a matter of fact, all processes must be modified when using fatty acids. An important item in the use of fatty acids for soap is the fact that fatty acids can be saponified easily. It is possible, in manufacturing soap by boiling to save 30 per cent of steam. Soap manufacture from fatty acids can be reduced in cost cheaper still by using sodium carbonate instead of caustic soda. We deal here with the so-called carbonate-saponification-process.

The full charge of fat stock must NOT be pumped into the kettle. The solution of soda ash is NOT added slowly in small portions,—similar to the saponification of neutral fat, for immediately "acid soaps" would be produced, which are transformed into normal soap with great difficulty only. When using soda ash, it is necessary to pump the whole amount of the soda solution into the kettle and then slowly to add the melted fatty acids. Fatty acids are saponified the same way when using caustic soda. The same applies to the semi-boiled process. It is advisable to stir the contents of the kettle when adding the melted fatty acids to the lye. It may be emphasized in addition, that if the fatty acids contain neutral fat, it is necessary to saponify the neutral fat with caustic soda lye. (This fact is important for mixed fat stocks of fatty acids and neutral fat as well.) From the percentage of neutral fat in the fatty acids, it can be calculated how much caustic soda lye should be used for the saponification of the neutral fat, and how much soda ash for the saponification of fatty acids. It is advisable to use as a rule more caustic soda than calculated, and respectively less soda ash as in this way a complete saponification is made certain.

Now the question arises whether a soap manufactured from fatty acids is of the same value as a soap manufactured from corresponding neutral fats. First, it must be stated that a soap produced from fatty acids needs less salt to be salted out as such soap is more sensitive against electrolytes than a soap from the corresponding neutral fat in which the content of glycerine reduces the efficiency of salting out the soap.

[5] Margaret J. Haussmann, June, 1937, *Soap*.

[6] F. Heller, *Seifenindustrie-Kalender* 1938.

[7] *Seifensieder-Zeitung* 1937, p. 449, 530, 608.

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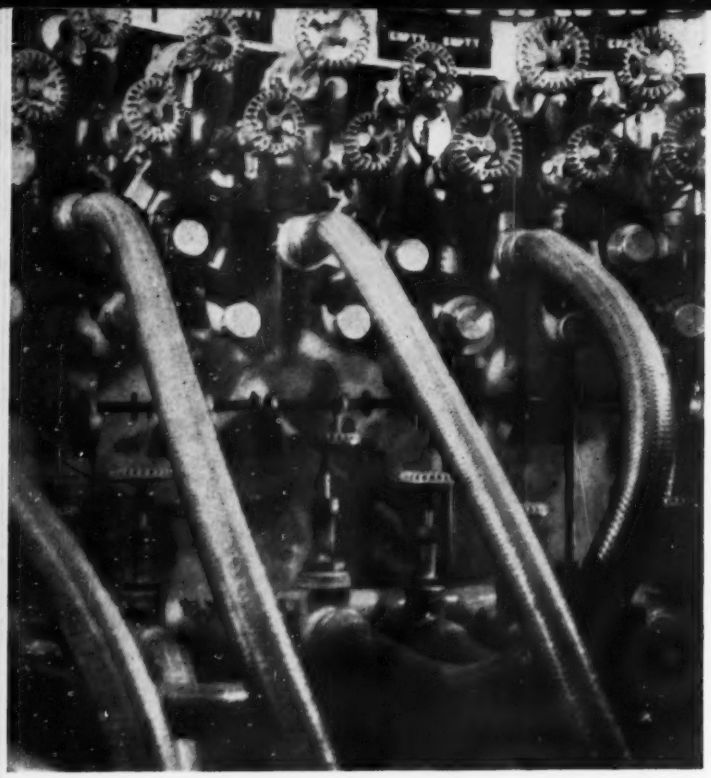


Manifold gallery for flexibility. Top row of locked valves are discharged from finished product tanks. Middle row manifolds. Bottom row discharge lines to filling equipment and packaging lines.

LIQUIDS —

FOR the large manufacturer, the contemplation of modernizing his liquid handling and packaging equipment or installing new equipment may be a matter of drawing upon the experience of his technical staff, or he may employ a consulting expert, particularly if he is a newcomer in this type of work. Then too, when he considers new equipment, his requirements are usually so large that equipment manufacturers vie with each other in making available all that is known about the problem and all that which is new in the field.

Among the manufacturers of shampoos, insect sprays, polishes, disinfectants, and many allied specialties, for every large firm, there are ten small ones,—and it is to the latter group particularly that this discussion is directed. Furthermore, since the discussion will embrace everything from liquid floor wax to liquid insecticides, and from hair shampoo in glass to rug shampoo in tin, the subject at best must be dealt with in generalities and with the hope that it will be thought provoking so as to cause extra care to be taken in selection and installation.

If but one liquid is to be handled, usually there is one metal best suited to the purpose. If a number of various dissimilar liquids are to be handled with more to come as time goes on and new specialties are introduced, glass lined tanks are safest. The cost today has been reduced on standardized sizes to a low point, whereas earlier costs might have been prohibitive. The only time glass lined tanks have ever proven a disappointment is in the small sizes where the metal shell or base has been too light in gauge or where the tanks have been portable and been abused.

Before choosing the complement of tanks, mixing tanks or mixers, kettles and filling machines, it is vital to ascertain the effect of the product on the equipment and conversely the effect of the material of construction of the equipment on the liquid or liquids. Accurately weighed pieces of the metal it is proposed to use may be immersed in separate portions of the product in beakers or wide mouth jars. Visual inspection and re-weighing after a period of days or longer, if available time permits, will indicate through loss or gain in weight whether or not it has been attacked. Inspection of the liquid for cloudiness or discoloration, or the emulsion for stability and effect on viscosity will also assist in the determination of its fitness. With glass lining, monel, inconel, stainless steel, aluminum, earthenware, copper, tinned copper, block tin and even hard rubber and block silver so effectively, beautifully and economically fabricated, it is but necessary to specify the proper material to the logical manufacturer.

Cooking and Chilling

The large manufacturer has live steam available at boiler pressure for his manufacturing operations, but frequently the small manufacturer is at a loss as to how to avoid a costly installation. Direct heating with gas is of course the easiest. However, the fire hazard and the possibility of injury to the product from over-heating often renders this procedure impractical.

A self-contained kettle and steam generating plant is available. One type has a special independent coil heater, gas operated. This heater is entirely separate and the kettle cannot be damaged by the system running dry. The copper coil heater is of sufficient capacity to get up a steam

. . . their handling and packaging

By Ralph H. Auch

pressure of sixty pounds on the jacket in fifteen minutes. It may be operated safely at pressures up to eighty pounds, which is equivalent to a temperature higher than is required in all ordinary applications.

A second type which is more nearly automatic is the gas-fired boiler which is built low in height so that the water line in the boiler is below the steam chamber of the kettle. The condensate from the steam chamber of the kettle thus flows back to the boiler without the use of steam traps. The flow of gas is through an automatic valve so that as soon as the desired steam pressure is attained the gas flow to the burners is throttled. Where city water pressure is greater than the boiler operating pressure only a feed-water regulator is required. If the boiler pressure exceeds the available water pressure an automatic feed-water pump may be employed.

Chilling is essential to the manufacture of certain products to make them crystal clear and sales-inviting. Refrigerating equipment is now commercially available in a variety of types and sizes for industrial installation. Its cost is so low that no excuse longer exists for neglecting to make this installation if of value to the product saleswise.

Likewise, it is an acknowledged fact that only distilled water is chemically pure. Yet, many liquid products that would be improved by its use are manufactured or diluted to desired concentration with ordinary tap water. Water stills, both gas fired and steam heated, are available in such a variety of types and capacities that they will be dismissed with an urge that they be given serious consideration.

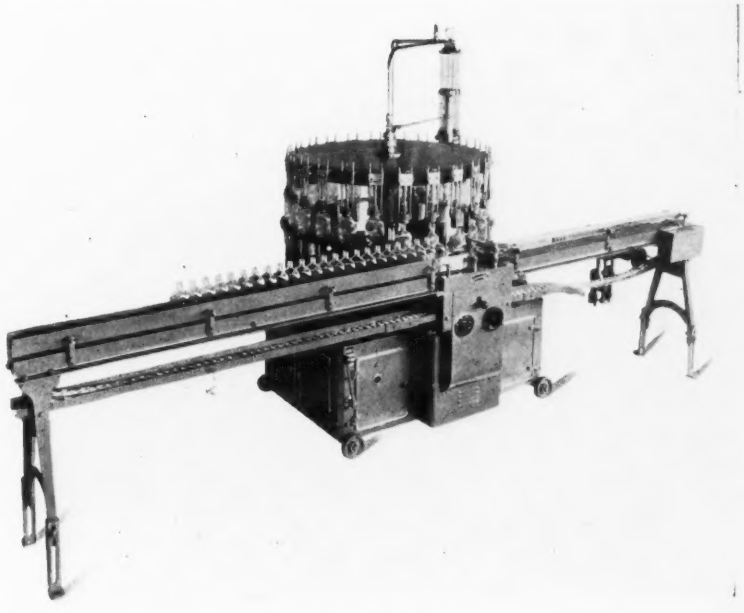
Mixing

Some products, particularly simple mechanical mixtures, can be prepared at normal temperature by simple mixing. Various types of agitators, fixed and portable, offer a wide choice. For inflammable mixtures the motor drive, whether direct or hooked to a line shaft, may well be of explosion proof type. Lighting may well be of the same type or at least vapor proof although both are admittedly more costly to install.

One type of agitation that should not be overlooked is compressed air. If, however, the ingredients are highly volatile, the evaporative loss may be excessive. Then, too, if the difference in specific gravity of the various ingredients is appreciable, compressed air may not be adequate to overcome the tendency to stratify. The mounting of the jets can be so arranged as to get a turning over, swirling or any other desired effect.

In the case of a product containing suspended solids, such as white shoe dressing or stove polish, a variable speed drive may well be provided. A suitably high speed is required for intimate mixing and a low speed to maintain the solids in

High capacity 24-stem Kiefer automatic rotary vacuum filling equipment.



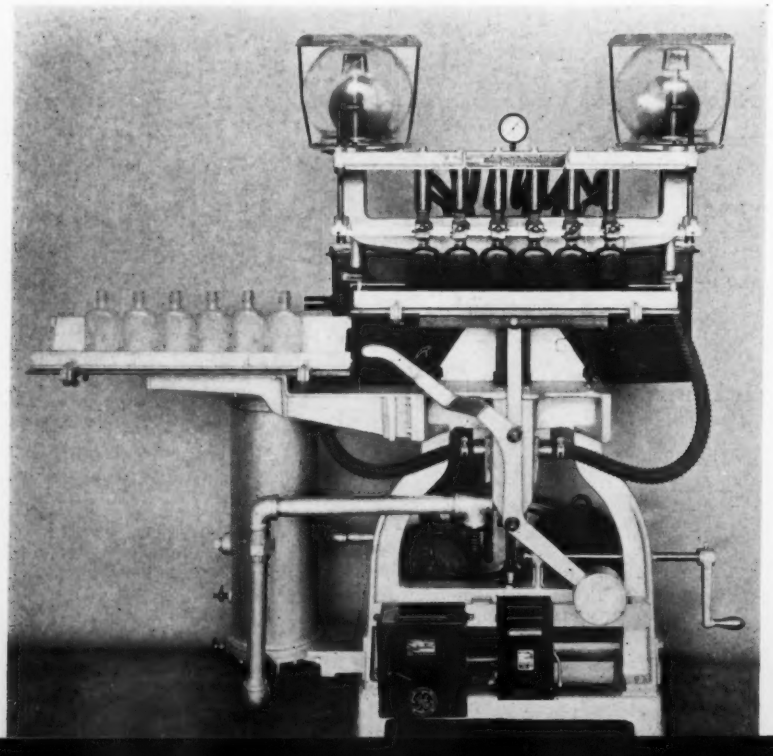
suspension while transferring or filling off into containers.

A commonly observed shortcoming is lack of flexibility. This may take the form of an insufficient reservoir between mixing and filling equipment. Sometimes the storage tanks are so arranged at improper levels that movement that should be readily accomplished by gravity flow requires needless pumping.

Added flexibility can be obtained by having the discharged pipes of storage tanks fitted with suitable valves and having all terminate at a common point. At a slightly lower level, the pipes to the various fillers can be mounted. With the aid of one or more manifolds and a few lengths of rubber or flexible metallic hose every tank can be connected to any filler and to more than one filler through the manifold at the same time.

Raw materials likewise are in some installations inconveniently arranged. Then, too, it is necessary to measure the various ingredients volumetrically when scale tanks could be employed to weigh directly or by difference and in either case more conveniently and far more accurately.

Smaller liquid filling unit, semi-automatic vacuum type, by Pneumatic Scale.



Cleaning Containers

The first consideration in the mechanical filling of containers should be the proper preparation of them. They should be properly cleansed whether by washing, rinsing or air blast. It is true that present-day containers produced on automatic machinery are generally quite clean. On occasion, however, difficulty may be encountered with the high alkalinity of glass or the flux or solder of tin or terne plate cans.

However, particularly in the case of glass, when packed in one-time service cartons or even when packed in reshippers, there is a certain amount of lint and dust from the liners and corrugated board that should be removed. The most complicated and thorough equipment for cleaning glass containers, of course, is the completely automatic machine that gives the ware a double soaking in hot caustic solutions. Then the entire inside and outside surfaces are scrubbed, thoroughly rinsed and dried by draining. Its use formerly confined to reused beverage bottles may extend to this field if the returnable bleach solution bottle idea becomes more widespread.

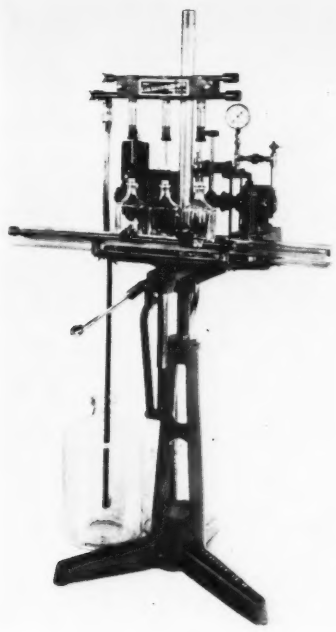
The so-called "rotary washers" which are inexpensive and semi-automatic merely rinse the containers with hot or cold water. They are satisfactory for tin as well as glass but the tin cans must drain thoroughly before packing or there is a tendency to corrode at the seams. A new inexpensive modification of this type has recently become available that overcomes a serious objection to the above. The objection is that hard water used for washing and rinsing leaves a hardness residue on air drying. With this new type, the containers are washed with the liquid they are to contain so there is also no dilution or untoward effect if the liquid packaged is immiscible with water.

It is of the usual rotary table type, hand rotated instead of motor driven, so that no nozzles are allowed to discharge a jet of washing liquid unless containers are over them. Thus the waste of liquid is confined to normal evaporative loss and none gets on the outside of the containers. The liquid circulates by pump through a self-contained filter of the internal pressure cylinder type so that the liquid is kept clean. This type is particularly suitable for use on free-flowing liquids that are relatively inexpensive.

The two widely used types of air cleaners are the rotary with the disadvantage of cleaning in an upright position and the gang which inverts the bottle before application of the jet of air but makes plenty of noise in so doing. One equipment builder will announce shortly a rotary cleaner that inverts the container yet handles them singly. This new design, if it proves entirely workable, will doubtless lend impetus to the trend from washing to blowing.

Types of Filling Machines

The selection of a filling machine depends not only upon the physical and chemical properties of the liquid or liquids which are to be filled, but also upon the different sizes and kinds of containers as well as the production speeds required on each size and kind of container. Obviously, a filling machine suitable for filling shampoo into gallon containers for beauticians would not be suitable for filling samples into two-



Simple three-stem self-contained Kiefer vacuum filler of small capacity but wide range of products and containers.

dram bottles. By the same token, glass, metallic, stoneware, and opal glass containers may require different filling machines depending upon the sizes and the production speeds required.

There are four mechanical principles which form the basis of design of all filling machines, namely: (1) pressure, (2) siphon, (3) accurate measure and (4) vacuum. Each of the four types of filling machines have definite advantages and limitations. The pressure types of filling machines have the least applications and the fewest advantages, because they are not volumetric fillers and the amounts filled into containers must be controlled by hand.

A very good application of the pressure type filler is the so-called "press-on-it" or whistle valve mounted rigidly so that the outlet looks down. Small containers with capacities from $\frac{1}{4}$ oz. to 2 oz. can readily be filled by inserting the opening of the container over the outlet of the valve and pressing upward on the container to open the valve. The valve can be quickly closed by removing the container. The containers filled in this manner must of necessity be made of glass so that the level of the liquid in the containers can be observed in order to fill the containers to the desired height. There is a decided advantage in mounting the valve rigidly and moving the containers, instead of connecting the valve to a flexible hose and keeping the containers stationary, as the valve can be closed more quickly and the containers can therefore be filled to a more uniform height. With the valve mounted rigidly, the closing of the valve is accomplished by diminishing the strain on the hand, while with the containers stationary and the valve being moved the strain on the hand is increased in order to close the valve, as the valve must be lifted from the container being filled. As many as 20 containers per minute can readily be filled in this manner.

The siphon filling machines are the most widely used in plants of all sizes because they are so simple and economical to operate, very easy to clean, adaptable to sizes from 1 oz. to 1 gal., comparatively low in initial cost, and give excellent results in medium-sized production over a period of years. The siphon fillers are adaptable to a variety of liquids such as liquids which foam easily, liquids which are fairly viscous, corrosive liquids, and volatile liquids. The capacities of the siphon filler vary from ten to thirty containers per minute, depending upon the size of the containers to be filled. The smaller size containers can be fed to the siphon fillers two at a time with each hand by properly spacing the stems and the production will be proportionately increased.

Some liquids are so expensive that variations in capacity of the containers in which they are to be filled presents a problem if they are filled to a uniform height rather than with an exact amount of the liquid. The accurate measure fillers are the most suitable for such expensive liquids since all other types of filling machines, with the exception of the weighing liquid fillers, fill all of the same size containers to the same height and the same amount of liquid is not put in each container due to the variations in the capacities of the containers.

The accurate measure fillers are also especially suitable for filling metallic, opal glass and earthenware containers since the level of the liquid within the containers cannot, of course, be seen. Furthermore, they

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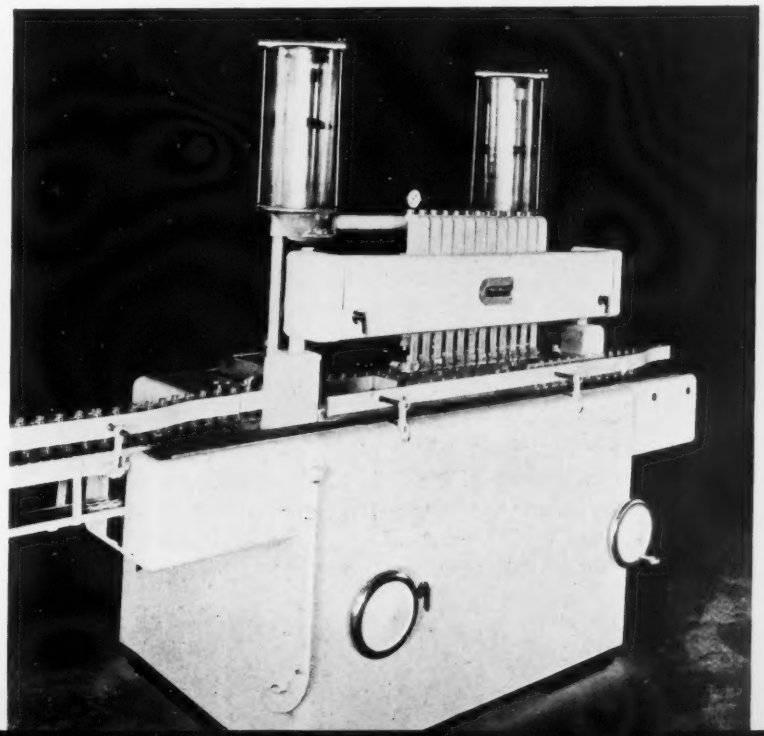
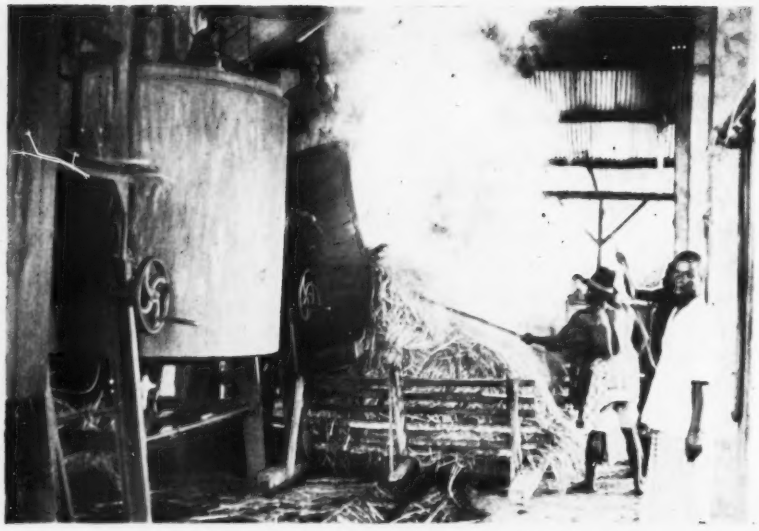
Vacuum automatic filling equipment for high-speed liquid filling operations—by Pneumatic Scale.





OIL OF L

BECAUSE of the very primitive nature of the entire lemongrass industry, with its widely scattered plantings, lack of roads and difficulties of transportation, there exist no centrally located, large-scale distilleries. Distillation is carried out in numerous crude field stills distributed over the regions and set up near a planting. The cutters carry the plants on their heads to the small distillation posts. If no running water is available, the distillers dig a deep well and draw the water in buckets attached to a high lever.

The stills, as said before, are primitive; they are usually six feet high, three feet wide, and hold about 100 to 200 gallons. They are made of copper and are not provided with perforated grids. The stills are sunk into the mud hearths up to a manhole, about half the height of the still, through which the plants are charged. Water up to the manhole is then poured into the still. The distillers manage to press into the still several hundred bundles of plants, each bundle weighing one-half to three-quarters of a pound. They claim that moist plants may be packed more tightly. The manhole cover is attached with a crude paste of mud which dries when the metal becomes hot. The tops of the stills are not removable. The condenser consists of a serpentine tube set into a wooden barrel about six feet high. This barrel is kept filled with running cold water but, if such is not available, water drawn up from a well is poured into the barrel whenever its content becomes too warm. The stills are usually protected from the sun by a protruding palm-thatched roof. A wide, low, tin beaker serves as "Florentine flask," the accumulating oil being carefully skimmed off with a spoon and poured into bottles.

Above: Inside view of a modern lemongrass distillery in Madagascar during unloading spent grass from a still. Lower view: By contrast, a small native lemongrass still in Cochin, the still imbedded in mud with fire beneath.

Wood cut from the near-by jungles serves as fuel for the direct fire beneath the stills. This wood is either cut by the distiller's family (in which case cost of distillation is somewhat lower), or it is purchased from coolies. Because of abundant wood available in the jungles, exhausted grass is usually not used as fuel, probably also because the high moisture content of the air and frequent showers prevent the exhausted plant material from completely drying in the sun.

Distillation of one charge lasts about three hours, one charge yielding on an average about one-half bottle of oil. The distillers and their families work about fifteen hours daily and by distilling five charges they obtain, per still, about two and

LEMONGRASS

A survey of production, costs, marketing, quality factors in the producing areas

Part II

By Dr. Ernest Guenther

Fritzsche Brothers, Inc.

a half bottles of oil a day. No exact figures as to yield are available because of the primitiveness of distillation. Neither plant material nor yield is weighed carefully but, concluding from the approximate weight and the number of bundles charged into the stills, the yield seems to vary from 0.25 to 0.5 per cent from fresh material. Of course, yield varies greatly with season, condition of plant material and soil, and age of planting.

Cost of Production

THE following figures cannot be taken as actual basis for price calculation, first because of the extreme primitiveness of this industry which knows no labor cost and, secondly, because prices of lemongrass oil are really determined by demand, supply, and speculation. During the Fall of 1938, it was claimed that it cost the native distillers about rs. 1-14-00 to rs. 2-0-0 to produce two and one-half bottles of oil. These figures included rent for the ground which the native distiller had to pay his landlord. It also included wages for coolies and their wives for cutting and transporting grass and firewood to the stills. These wages usually are not paid in cash but in the form of rice, tapioca, and other produce.

During the Fall of 1938 the distiller could sell his daily output of two and one-half bottles of oil to a native broker at about rs. 2-8-0 which left the former a daily profit of about one-half rupee (approximately 20 cents United States currency) without counting his own labor or that of his family. If the members of his family cut grass and firewood, the distiller's profits are a little higher because they comprise all the labor. In this case he might be able to run not only one but two or three stills. Since labor is by far the most important item in the cost calculation of lemongrass oil, the price in the Fall of 1938 just about covered the distiller's and his family's labor. To give an idea of living conditions in those sections of southern India, we might mention that a wharf coolie earns about 3 or 4 annas daily, 1 anna being worth about 2.5 cents United States currency. A sack of rice costs rs. 6 and might last a fam-

Top: A native distiller in Cochin skims the oil from his primitive Florentine flask and pours it into a bottle. Below: Outside view of a modern distillery in Madagascar.

ily a whole month. It is claimed that a native family can live on 8 annas (20 cents United States currency) a day.

Marketing of Oil

As mentioned, the distiller skims off the oil accumulating in his primitive "Florentine flask" and collects it in old bottles. The oil is still muddy and contains water and copper salts. He sells it in bottles or larger containers to a native field broker who has a capital of a few rupees. If the distillery is close enough to a village, the distiller brings the oil to one of the many little shops where the native dealer first clarifies it by decanting and finally filters it through paper into ordinary tin cans (gasoline cans) which hold twelve bottles of 22½ ounces by weight or a little more than 16½ pounds of oil. There are any number of shops in villages of the producing regions dealing in oil of lemongrass. The normal profit of a dealer is about 4 annas per can unless he gains by speculation.

He sells his oil through a native broker to the exporters in Cochin. These brokers usually live in the villages and regularly call on the exporters in Cochin, or live in Cochin and visit regularly the producing regions. They, too, make a profit of about 4 annas per can of oil when selling to exporters in Cochin lots of 500 kilos to one ton and more. The native brokers are indispensable because the exporters in Cochin are too occupied with more important products of the country and are hardly in a position to deal directly with the many small dealers in the more remote villages. Some of these native brokers for many years have enjoyed the complete confidence of the exporters and, therefore, this form of purchasing oil of lemongrass has proven most satisfactory. Some of the town brokers are quite wealthy and carry their own stocks from which they sell to the exporters; in other words, they are independent dealers rather than brokers. Whenever the exporters in Cochin get shipping orders from abroad or contracts for future delivery, they fill the orders from their actual stocks and through their brokers purchase additional quantities from smaller dealers in the villages.

Every exporter has a small and simple analytical laboratory where the content of each can is tested for solubility; cans of inferior solubility are rejected. One volume of oil should be clearly soluble in two volumes of 70 per cent alcohol. Average samples of several cans are tested for the content of citral by the sodium bisulfite method. Oils of low citral content are either rejected or, if otherwise of normal properties, are bulked into larger lots until standard bulkings of a certain citral content are obtained. They are shipped to Europe or America in the well known, tinned iron drums.

The shipping contracts guarantee a citral content of at least 75 per cent. However, upon aging the citral content is liable to decrease. This loss amounts to about one-quarter per cent in a closed container but is higher if the oils are filtered or transferred from one container to another. Therefore, the exporters figure on a loss of citral of about one-half per cent per month. They must consider not only the time of storage in their own warehouses before shipping but also the time of storage in warehouses of the agent abroad before the oil finally reaches the buyer. There might in addition be a discrepancy in analysis and, therefore, reliable exporters, in order to guarantee a minimum of 75 per cent citral, bulk their lots in Cochin at a minimum of 77 per cent citral.

Gildemeister and Hoffmann[6] confirm this decrease of citral, which usually goes hand in hand with an increase in specific gravity. Two samples of Cochin lemongrass oil, after storing for three and a half years, showed a decrease from 78 to 64 and 60 per cent respectively, while the specific gravity increased from 0.898 to 0.925 and 0.923 respectively. The same authors report that the citral content is even more drastically influenced by moisture present in the oil. A moist lemongrass oil showed after only three months a decrease from 79 to 68 per cent citral, while a second sample, carefully dried, under otherwise identical conditions showed a decrease to only 74 per cent. It is, therefore, very important to store lemongrass oil, not only well protected against air and light, but also after careful elimination of traces of water.

Since all oil of lemongrass exported from Cochin consists of standardized bulkings of many small lots originating from a great number of small producers, it would be quite difficult to purchase well defined types of oil produced in certain regions. It might, however, be possible to specify in the contract a citral content higher than 75 per cent which, of course, would demand a premium. Such lots of high citral content are very much in demand by the exporters themselves, in order to bring up the citral content of somewhat inferior, though pure oils, which the exporters are more or less forced to purchase with the better oils.

Sufficiently large stocks for several weeks, even months, are advisable but if the market price should in the meantime decline, the exporters must follow the price trend or lose their customers abroad. In general, prices are influenced by demand and supply and very much by speculation. Unfortunately, the Indian middlemen and dealers do not always keep their engagements when market prices go against them, which makes purchasing of oil of lemongrass quite risky for the exporters.

There is no governmental control of shipments leaving Cochin, but all exporters, as pointed out before, have their own small testing laboratories. During periods of high oil prices the dealers in the villages are inclined to adulterate with kerosene and fatty oils, especially coconut oil, but such additions lower the citral

[6] *Die Atherischen Ole*, Vol. II, 3rd Ed.
[7] *Loc. cit.*

content and solubility. More dangerous is adulteration with methylated spirits, easily available in the villages. During periods of very low oil prices, adulteration is less profitable and not so frequently encountered.

Buying Lemongrass Oil

THE best period seems to be toward the end or right after the producing season,—from November to January. Due to the great quantities of oil available, prices then are reasonable and in addition the oil is still fresh and has a high content of citral. Speculation, however, very frequently upsets any market prediction. The Indian banks have a tendency to advance money to the Indian dealers up to 75 per cent of the value of the oil, which is held as security. A slight crisis may force the banks to call in the loans and if they are not paid immediately, the stocks of oil are "dumped" on the market, thereby causing great confusion.

Constants of East Indian oil of lemongrass shipments received during the last five years directly from Cochin have varied between the following limits:

Specific Gravity at 15° C.: 0.900 to 0.910; mostly between 0.900 and 0.905.
Optical Rotation (10 cm. tube): —1°10′ to —2°30′.
Refractive Index at 20° C.: 1.4859 to 1.4890.
Citral Content (bisulfite method): 74.5 to 77%.
Solubility at 20° C.: Usually soluble in 2 to 2.5 volumes of 70% alcohol; sometimes opalescent or slightly cloudy with more. A few lots were not clearly soluble in 70% alcohol up to 10 volumes.

West Indian Lemongrass

AS pointed out before, the designation "West Indian oil" is a rather arbitrary one and originated years ago in connection with some lots of oil shipped from the West Indies. A. Stapf[7] later definitely established that this type of oil, characterized chiefly by its inferior solubility, is distilled from *Cymbopogon citratus* Stapf. The bulk of this oil, 50 to 60 tons yearly, is nowadays produced in the northern part of Madagascar, right opposite Nossi-Be, and also in the Comoro Islands, while the West Indies produce only insignificant quantities. Whereas production of East Indian lemongrass oil is entirely in native hands and carried out in numerous primitive field stills, the so-called "West Indian" oils are produced in modern steam distilleries owned mostly by large-scale European planters. The plantings are extensive, well kept and play an important role in the working program of a well organized agricultural enterprise. In Madagascar and the Comoros there are hardly any natural pastures for cattle grazing, but it has been found practicable to plant lemongrass, distill the oil and feed the cattle with the exhausted plants. The high oil content prevents the cattle from eating the grass before distillation. Thus, oil of lemongrass is almost a by-product and, if prices rise above frs. 30 per kilo, production becomes quite attractive.

Cymbopogon citratus Stapf is seldom found growing wild; only cultivated plants are used for distillation. A well drained, sandy or sandy-loamy soil is best suited for planting. The grass requires a long rainy season, a high degree of humidity even during the dry season, and a generally warm climate. Before planting, the soil must be loosened up by thorough plowing. Planting usually takes place from December to January—not by seed but by dividing the roots. *Cymbopogon citratus* very seldom developing flowers. Holes about ten inches deep are dug into the ground with a crowbar and the plants set out two by two feet apart or one and one-half feet, with the rows about three feet apart. The holes are tightly filled with earth to facilitate development of the root system.

The first harvest can be obtained about four to six months after planting. Depending upon rains, three to four harvests are possible each year; in other words, every third or fourth month brings another harvest. More generally speaking there are two main harvests yearly, a larger one from May to August and a smaller one from September to October, the latter ending with the beginning of the rainy season in November. The cutting is done with machetes by hired native labor. In the Comoro Islands the cut plant material sometimes is left lying in the fields for about three to four days before being transported to the centrally located distilleries, while in Madagascar the cut plants usually are distilled right after cutting. No strict rules, however, exist in this respect, all depending upon the daily exigencies. A planting should last at least four years. If it is started on fertile ground and properly cared for, the life span may be nine years. Lemongrass is quite a soil-exhausting plant and, therefore, requires potassium and phosphate fertilizers. After lemongrass leguminous plants, such as peas, should be planted in order to enrich the soil again. After six months the leguminosae may be plowed under.

The oils are distilled either by direct steam distillation or by "steam *and* water" distillation. The direct steam stills have a capacity of about 3,000 liters, a charge consisting of about 800 to 1,000 kilos of plant material. The steam pressure in the boilers is about 7 kilos, and about 3 kilos when entering the still. Distillation of one charge lasts about one hour and during the height of the season up to fourteen charges are distilled daily in each still. The large distilleries, located on Madagascar proper, opposite Nossi-Be, usually contain three to five stills each.

The "steam *and* water" stills also have a capacity of about 3,000 liters. The plant material lies on a perforated grid beneath which water is brought to a boil by a steam jacket of 3 to 3.5 kilos pressure. Distillation of one charge lasts several hours because the steam pressure is much lower than in direct steam stills. Exhausted, sun-dried grass is used as fuel, coal being too expensive in Madagascar and the Comoro Islands.

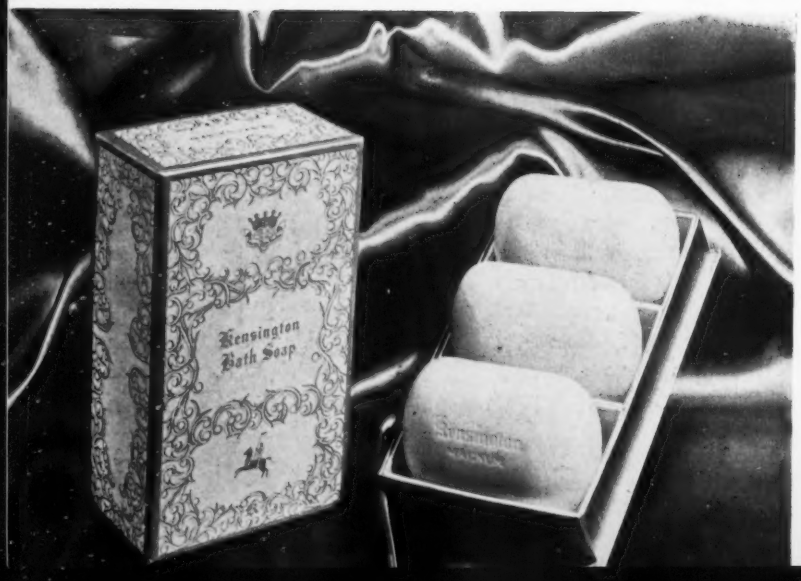
The yield usually varies between 0.2 and 0.4 per cent and de-

(*Turn to Page* 69)

New Products and

Rex Research Corp., Toledo, has just introduced a new line of lithographed containers for "Fly-Tox" and "Stockaid" insecticides. Packages, by Owens-Illinois, range from six-ounce to gallon size.

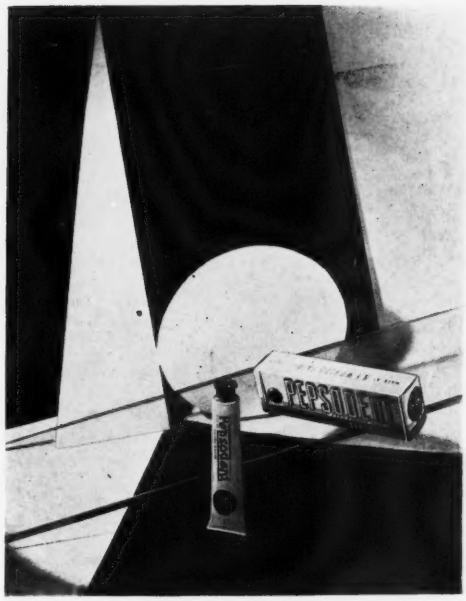
Perx Co., Chicago, has just introduced "Perx" a new dentifrice which not only cleans the teeth but tints the gums as well. It is attractively packed in matching gray tube and box.



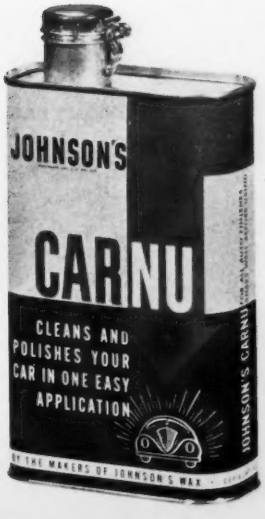
"Kensington" bath soap is one of the newest products of Hewitt Soap Co., Dayton, Ohio. Three 11-oz. cakes are packed together in a choice of six odors. It is being offered through the drug and department store trade. Package by Piqua Paper Box Co.

Packages

A ventilated plastic case to promote drying converts the world-famous Yardley shaving bowl into a traveling package. Hotel and steamer stickers on cardboard case carry out the travel note.



Pepsodent Co., Chicago, packages small tubes of tooth paste at its World's Fair exhibit in containers which carry out the fair motif of Trylon and Perisphere. Cartons supplied by Amer. Coating Mills.



The container for "Carnu," newest product of S. C. Johnson & Son, Inc., Racine, Wis., uses the characteristic Johnson colors, yellow, red, black and white. 5 gal. container of "No-Buff" floor finish, another recent offering, is by American Can Company.

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News....

Bon Ami Earnings Up

Bon Ami Co., New York, reported a net profit of $717,284 for the first half of 1939. This is equal under participating provisions of the shares to $3.47 each on 94,583 shares of no-par Class A stock, excluding 5,417 shares held by the company, and $1.94 a share on 200,000 shares of no-par, Class B stock. Last year the net profit was $679,035, or $3.27 a Class A share and $1.85 a share on Class B.

Tainsh Presents Paper

P. W. Tainsh, chief chemist, Lever Bros. and Unilever, Ltd., London, presented a paper on "Progress in Industrial Oils and Fats, and Detergents" at the recent annual meeting of the Society of Chemical Industry. It is of interest to note, he says, that it is not in the actual process of soapmaking that the most progress has been made. Developments of the greatest value have taken place in connection with the main raw materials of the industry, oils and fats. With these developments, Mr. Tainsh continues, the soapmaker is better able to predict the behavior of his soap in respect of lathering power, detergent effect, keeping properties, etc.

Mayham Joins T.G.A.

Stephen L. Mayham, formerly editor of the *American Perfumer*, has resigned from his World's Fair post, effective Sept. 1, to join the Toilet Goods Association as director of its board of standards, succeeding H. Gregory Thomas.

New Soap Filler

A new type colloidal soap filling material especially for use in soap powders, household soaps and cleansers is being manufactured by Dr. Ernest Stossel, New York, the inventor. The patented process calls for the use of starch as raw material for the new product. It was formerly manufactured at Barcelona, Spain, by the Laboratorio Spred of which Dr. Stossel was the head and was sold in that country under the name of "Spred." Claims for the new material are that it increases the detergent power of soaps and cleansers, that it is low in cost and cuts the cost of soap products in which it is used. Dr. Stossel was formerly engaged in soap manufacture in Spain, particularly olive oil and foots soaps.

Dr. Ernest Stossel

Offer Glycerine Derivatives

Glycerine Producers' Association, through its research laboratories, 9 South Clinton St., Chicago, is now offering in small experimental lots certain new glycerine derivatives. These latter include glycerine monochlorhydrin, glycerine dichlorhydrin, and glycerine alpha monophenyl ether. Information regarding these and other glycerine derivatives may be secured by communicating direct with the Association's laboratories. The materials are available in four, eight, and sixteen ounce packages, and the size of orders is limited.

Eastwood Armour Exec. V. P.

Armour and Co., Chicago, has recently elected George A. Eastwood as executive vice-president of the company. Mr. Eastwood began his career with Armour and Company in 1897 as an office boy in the branch house at Albany, N. Y. In 1901 he became chief clerk in the New York branch house superintendent's office and two years later he was made assistant superintendent. In 1915 he was placed in charge of a sales district centering in New Haven, Conn., and then transferred to the general office in Chicago as assistant manager of the canned food department. Five years later he became the manager of the department and in 1926 he became the general superintendent of the company's branch houses. He was later placed in charge of the company's by-product enterprises and in 1929 elected vice-president.

Soap Index Down

The employment index for the soap industry in the United States during May of this year was below that of the previous month, dropping to 87.7 as compared to 88.4 for the month of April. The 1939 May figure was, however, almost three points above that of May, 1938, when the reading was 85.0. The soap payroll indexes for those same months were 90.3 for May, 1939; 91.2 for April, 1939, and 86.0 for May, 1938.

Soap As Building Material

A house built of ashes and waterproofed with soap has been built at Sonop, in the Transvaal, according to a recent dispatch. It has six rooms and cost $1,075. More experimental houses of the same kind are said to be under construction. The material used consists of 95 per cent ashes and 5 per cent cement, sand and soap.

Asks Aid for U. S. Whalers

Lever Bros. Co., Cambridge, Mass., in a recent statement supported the House of Representatives' joint resolution No. 347, which, it is contended, would save the newly revived American whaling industry from threatened extinction by giving it five years in which to acquire American killer ships. The joint resolution would amend the revenue act of 1938, so that American whaling companies employing foreign killer boats would not be assessed prohibitives taxes on whale oil imported into the United States. The Lever Bros. statement said in part "No one apparently disputes the existence of a market for whale oil in this country and since its importation is now, to say the least, difficult because of a duty of three cents excise tax, it certainly seems advisable and sensible to permit the development of an American whaling industry to take care of this market. Very little imagination is required to foresee the danger of letting foreign interests completely dominate the field. In the event of a war which prevented or hindered the purchase of foreign vegetable oils by domestic consumers, or in the event of a decrease in the production of animal fat in this country, a domestic whale oil industry would prove definitely helpful."

W. Tuttle, Sr., Dies

Wylie F. Tuttle, retired publisher of Mamaroneck, L. I., died last month of pneumonia. He was 79 years of age, and had been publisher of a group of business magazines, among them: *Chemicals, The Chemical Age and Chemical Engineer, Chemical Color and Oil Record,* and the *Color Trade Journal.* Surviving is a son, Wylie F., Jr.

Writes on Advertising

Miss Frances M. Suarez, head of the advertising department, Philadelphia Quartz Co., Philadelphia, is one of the authors of a new book called "Advertising Careers for Women." The publication is a compilation of 22 lectures given last fall under the sponsorship of the Philadelphia Club of Advertising Women. Miss Suarez contributed the chapter on Industrial Advertising. She speaks with authority of experience and prestige as she was the first woman member of the Eastern Industrial Advertisers Association, Philadelphia Chapter of National Industrial Advertisers Association, and its secretary since 1935.

Drug Section Meets Oct. 20

William D. Barry, chairman of the Drug, Chemical & Allied Trades Section of the New York Board of Trade, recently announced that the Fourth Annual Fall Meeting and Golf Tournament of the Section will be held this year at Skytop Lodge, Skytop, Pa., on October 20th and 21st.

Boston Bims Golf Tournament

The First Golf Tournament and Dinner of the "Bims of Boston" was held a few weeks ago at the Commonwealth Country Club, Newton, Mass. The party included forty members of the local "Bims" and twelve guests from the "Bims of New York." Among these was Martin Schultes, chairman of the New York organization. Prize winners were as follows: Grand Prize, F. J. Hailer, United Drug Co.; Golfers, Ralph E. Stuart, B. B. Chemical Co.; Frank W. Miller, Howe & French; George E. Esslinger, United Drug Co.; Frank H. Knowlton, Napthole, Inc.; A. M. Cooke, Commercial Solvents Corp., and Claire O. Ewing, United Drug Co. Non-golfers, H. Farrier, Stevens Nelson Paper Corp. and Cletus Gallagher, California Fruit Growers Exch. Guest winners, members of the Bims of New York, were Sewell H. Corkran and H. B. Sliger. Bob Kelly, chairman of the Boston club, stated that an announcement of the next party will be made shortly.

Upper left — Martin Schultes, chairman BIMS of New York, was one of the visiting guests at the Boston BIMS outing.

Center—Robert Kelly, chairman BIMS of Boston.

Below — Two prize winners were, extreme left, Sewell Corkran of New York and, extreme right, Ralph Stuart of Boston.

P. & G. Dept. Head Honored

James E. Pruden, recently elected mayor of Wyoming, Ohio, is the second department head of Procter & Gamble at the Ivorydale plant to receive mayoralty honors in the metropolitan area of Cincinnati. The other is Mayor Joseph A. Schottelkotte of St. Bernard, Ohio.

Claim Oldest Soap Co. Title

Hunnewell Soap Company, headed by Leslie Webb, is one of three Cincinnati soap manufacturers more than a century old, recently honored by the Cincinnati Chamber of Commerce at a centennial banquet. According to Mr. Webb, Hunnewell is the oldest *industrial* soap company in the world and holds the further distinction that its executive head changed only three times over a ninety-three year period, these men being the founder, Daniel Hunnewell; his son, H. Greenwood Hunnewell, and William A. Webb. In 1928 Leslie Webb, nephew of the last-named, became president. The company makes scouring, soap and dish-washing powders and liquid oil soaps for the industrial trade, and has plants in Cincinnati and Cleveland.

Form Management Corp.

Steve Nordlinger, Conti Products; Lee Bristol, Bristol-Myers, Inc., and George Thackery, Lambert Co., are executives in the recently formed Exhibitors Management Corp. The corporation was formed in order to protect the interests of the exhibitors in the Hall of Pharmacy at the New York World's Fair, after the management of that building was taken over by the World's Fair Corp.

Michel Export Moves

Michel Export Co., detergent specialties, New York, has moved its offices to larger quarters at 90 Broad Street.

Japanese Soap Exports Up

Exports of soap from Japan have shown a marked increase since the latter half of 1938. Shipments for the first four months of this year were valued at $932,386 as compared to $618,184 and $570,852 for the corresponding four-month periods of 1938 and 1937.

Norda Establishes Branch

Norda Essential Oil & Chemical Co., New York, has recently established a branch office in St. Louis. The address is 1123 Washington Avenue.

SHAMPOO TREND?

What is the trend in the public demand for shampoos? Up or down? Are liquid soap shampoos losing ground,—or gaining? What of the soapless shampoos? A survey among retail outlets by the editorial staff of SOAP gives the answers, — in the next issue. Watch for it!

Curll Joins Rumford Chemical

Daniel B. Curll, Jr. has recently been appointed to the staff of the Rumford Chemical Works as assistant to the president. For the past nine years, Mr. Curll has been associated with the Philadelphia Quartz Co. as chemist in charge of semi-works development and as technical advisor to both the manufacturing and purchasing departments. He also served as a director and member of the executive committee of the American Doucil Co.

Adams on Park Commission

Frank C. Adams, vice president-treasurer, Andrew Jergens Co., and John H. Woodbury, Inc., has been appointed a member of the Board of Park Commissioners of Cincinnati for a six-year term.

Special Soap

A special soap is composed of soap, water, oil of wintergreen, glycerine and bicarbonate of soda. Victor Bordeleau. Canadian Patent No. 381,616.

Smith & Co. Move

S. A. Smith & Co., soap products, New York, have moved to larger quarters at 411 Bleecker Street.

New Prison Soap Plant

Maryland has just put into operation a new soap plant at the House of Correction at Jessups, Maryland. The new prison soap plant will manufacture laundry and toilet soaps as well as chip soap and powders to supply the needs of various departments and institutions of the State of Maryland. The plant was built and equipped by John R. Wald & Co., Huntingdon, Penna.

The State of New Jersey is erecting a new building at Bordentown, N. J., to house the state soap factory. The soap plant is at present located at the state prison at Trenton, but machinery and equipment will be moved to Bordentown, and installed in the new modern building sometime within the next month.

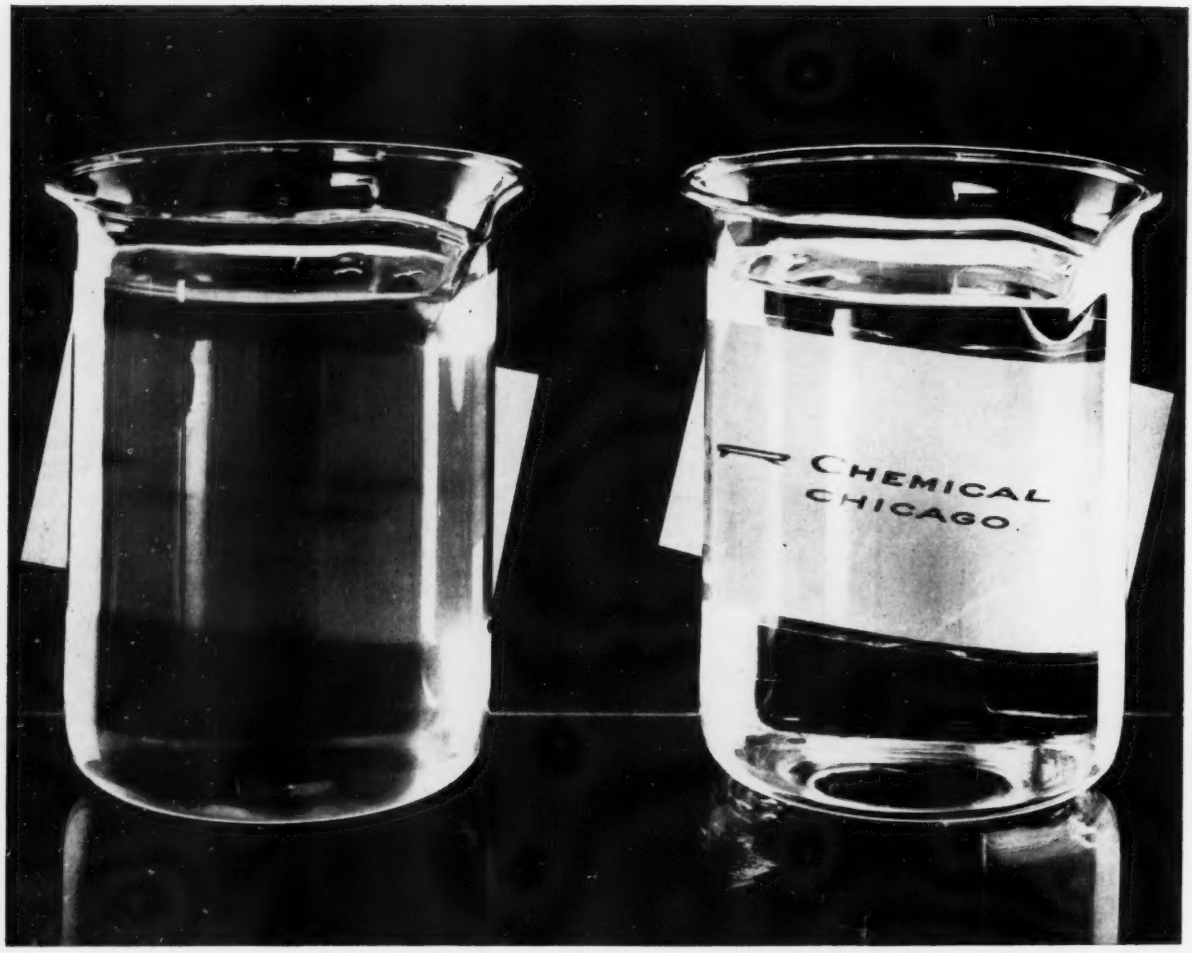
Gillam Soap Sales Poems

From down in Texas far away, SOAP got a letter yesterday, by Ernie Gillam of Forth Worth who runs the Gillam Soap Works. And the letter was in the form of a poem which he had just sent out to his customers in the laundry trade, entitled "A Laundryman's Day." Going on to tell all about "Blue Bonnet Soap," Ernie's metre skips a beat now and then, but here it is:

The day was hot as hot could be,
So many salesmen, I couldn't see.
From St. Louis and Chicago—four,
From Cincinnati, they clogged the door;
From far and near they piled right in,
And stuffed me full of pop and gin.
My back was slapped until it bled
My steno pestered until half-dead.
They told me stories, old as heck,
Until a pain came in my neck.
No trick o'er looked to make me buy
Until I thought I'd cry or die.
At night the place all quiet grew,
Says I, "It's clear now what to do!
Quality and economy is my only hope
I'll buy the best, Blue Bonnet Soap
It's white, high titre, ninety-two
With glycerine retained. It alone, will do.
Made in Dixie, the Land of Cotton
No Southern industry should be forgotten.
I'll shoot my order in to-night,
And have it back before daylight.
Fort Worth is only a few hours away,
And Gillam Soap Works night and day
They're prompt, careful, grateful, the best,
From now on I'll forget all the rest!"

NO MORE TROUBLE FROM IRON IN THE WASH WATER--NO MORE YELLOW DRAB CLOTHES--NEW SOAP BUILDER KEEPS IRON IN SOLUTION

TETRA SODIUM PYROPHOSPHATE



The beaker on the left contains a ferrous sulphate solution equivalent in strength to 20 parts per million of Fe. To this has been added 2 cc of N/3 caustic soda solution to each 1000 cc of the iron solution. As a result the ferrous sulphate has been oxidized and precipitated as ferric hydroxide. The solution is turbid as evidenced by the illustration.

The beaker on the right contains the same iron solution and the same amount of caustic soda. The only difference is that 10 parts per million of anhydrous tetra sodium pyrophosphate have also been added. No turbidity is evident. The pyrophosphate keeps the iron permanently in solution. The advantage thus obtained in washing fabrics is obvious.

VICTOR

VICTOR CHEMICAL WORKS
141 W. JACKSON BOULEVARD • CHICAGO • ILLINOIS

Plants: Nashville, Tenn.; Mt. Pleasant, Tenn.; Chicago Heights, Ill.

HEADQUARTERS FOR...
pHosphates

To Expand Sampling Campaign

Wiggins Chemical Co., Cincinnati, which since March has been conducting house-door sampling campaigns on "Wiggs" waterless cleanser in Ohio, Indiana, Kentucky, West Virginia and Wisconsin, is preparing to increase its crew of 800 girls for a Fall campaign along similar lines in Pennsylvania, New Jersey, Maryland, North Carolina and South Carolina. The crews work in groups of forty under the supervision of H. J. Walsh.

Jergens Answers FTC Charges

Defense witnesses for the Jergens-Woodbury Sales Corp., Cincinnati, testified in the Federal Building, Cincinnati, July 6, in continued hearings before William C. Reeves, Washington, D. C., examiner for the Federal Trade Commission, in its complaint that the Cincinnati concern made misrepresentations in its advertising concerning soaps and cosmetics. The commission alleges trade was diverted from competitors by misleading statements in which certain cosmetics were termed germproof. Among the witnesses were Dr. George Sperti, director of the Institutum Divi Thomae, Mt. Washington; the Reverend Cornelius H. Jansen, research professor at the institute; Dr. Albert P. Mathews, professor of biochemistry, and Dr. A. Presnell, fellow of biochemistry, both of the University of Cincinnati; and Dr. P. D. Adams, chief of the skin research laboratories of Andrew Jergens Co. Their testimony asserted that advertising as used was scientifically accurate. Government witnesses were heard in prior examinations in Washington and New York, and there will be further hearings there and in Boston for defense witnesses.

Sampling Soap

Methods approved by the Canadian Government purchasing standards committee include the sampling of soap and analytical procedures for the various determinations. In the case of bar soap, one bar is taken from each of three containers selected at random, to represent each of a thousand bars. For flake, chip and powdered soaps, one can or carton is taken from as near the center as possible of each lot of a 1000 pounds, or if these materials are in bulk, a 1-pound grab sample is taken. When dealing with liquid soaps, one pint is taken from each container of 50 gallons or less, after thorough mixing. With soft soap, grab samples of not less than one-half pound are taken for each 1000 pounds, from each of three containers. *Canadian Chemistry & Process Industries* **23**, 147-8, 159 (1939).

POOF

POOF SHAMPOO is ordinary liquid soap made from coconut oil and caustic potash.

¶ It contains more than 0.5% free alkali and four-fifths of it is water.

¶ It will not make your hair beautiful or silky.

¶ It will remove most of the natural oil from your hair and scalp, and may leave it dry.

¶ Do not get it in your eyes as it will sting like any other soap.

¶ It is not 100% pure and it is not made for discriminating buyers, but for anybody who can afford to pay 50c per bottle.

Manufactured by

The Hopeless Shampoo Co., Squnch, Ala.

SHAMPOO

A suggested shampoo label which is in full accord with the letter and spirit of the Wheeler-Lea Law, the new Federal Food, Drug & Cosmetic Act and all the new state laws,—a label which, it is believed, does not in any way take liberties with the naked truth and which covers all the claims, expressed or implied, usually associated with character, composition, or use of a shampoo.

Forms Mid-State Soap Co.

George Becker who was formerly associated with the old Green Oil Soap Co. of Chicago, as chemist and soap maker, has entered the soap business on his own account under the name of the Mid-State Soap & Chemical Co. Plant and office of the new firm are located at 25 East 8th St., Chicago. An announcement by Mr. Becker states that the new firm will manufacture a complete line of vegetable oil soaps, auto soaps, polishes, detergents and cleaners, also floor waxes and other sanitary specialties.

W. A. Welcke on Trip

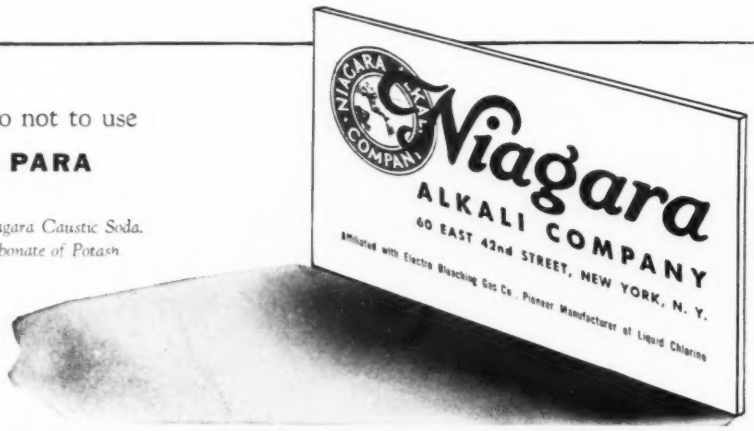
W. A. Welcke, vice-president, Fritzsche Bros., Inc., essential oils, New York, left early last month on a trip to Europe. His itinerary includes Norway, Scotland, France, Italy, and other points on the Continent. He was accompanied by Mrs. Welcke.

"Pardon me, Professor, but my wife would like to know what you meant when you said that some men marry out of sheer bravado."

It's sheer bravado not to use

NIAGARA PARA

And the same goes for Niagara Caustic Soda, Caustic Potash and Carbonate of Potash


NIAGARA ALKALI COMPANY
Niagara
ALKALI COMPANY
60 EAST 42nd STREET, NEW YORK, N. Y.
Affiliated with Electro Bleaching Gas Co., Pioneer Manufacturer of Liquid Chlorine

Survey U. S. West Coast Soap and Oil Shipments

AN exhaustive survey of American soap and vegetable oil exports and imports, with particular attention to the share of Southern California manufacturers and exporters in this trade, is contained in a report just issued by the Los Angeles Chamber of Commerce. The report concludes that the "arrival of the Pacific era for United States soap exports," has materially increased soap movements through that harbor since 1925, and will, the survey predicts, result in a several-hundred per cent increase in soap tonnage in that district during the next few years.

In a preamble, the survey cites the combination of governmental policies and circumstances which have been a major factor in reducing soap exports: The Federal excise tax on oil imports of three cents a pound; the fact that many foreign countries are encouraging manufacture of soap within their own boundaries for the glycerin by-product as a measure of national defense; the location of branch soap factories of American soap companies in foreign countries, where there is no excise tax and where wage scales are lower than the prevailing standard in the United States; and the fact that soap has been selling throughout the world in recent years at lower price levels than those of a decade ago.

The survey, reveals that in the face of these conditions, Pacific Coast ports have increased their share in the American soap export trade. Los Angeles now handles 20 per cent more soap export tonnage than in 1925, as compared with a 63 per cent decrease in tonnage of total United States exports since 1925. While the European trade has been declining steadily, the Oriental market for American soaps has been expanding, aiding the west coast trade.

Other conclusions presented in the survey include the following:

That although imports of copra have not been as great in recent years as during the peak year of 1933, the Los Angeles-Long Beach Harbor appears to have increased its rank as a gateway for imports of oil seeds of tropical origin.

That imports of coconut oil throughout the country have shown a tendency to increase since 1933, but Pacific Coast ports appear to have declined in importance as points of arrival for foreign crushed oils. It appears that a greater proportion than formerly of such oil imports is being imported through Atlantic Coast harbors.

That although American consumption of coconut oil has remained fairly constant and well above earlier levels over recent years, oil mills in this country seem to have been unable to hold their own in competition with foreign crushers. The lower standards of living and wages of native labor abroad are cited as causes for the increase of oil seed crushing in foreign countries.

The survey cites, further, that although coconut oil will usually sell at a premium in United States over other oils and fats, there is an economic limit to the amount of this premium. If the premium becomes too high, substitutes will be used to as large a degree as is economically possible.

The report recommends that United States governmental policies should be reviewed and revised to make certain that the domestic soap industry is not handicapped in the manufacture of soap and its sale in competitive world markets by restrictive taxes. It points further to a rather striking shift in the rank of the four countries which are the chief sources of supply for soap shipments to United States: The United Kingdom, from third to first place in value of shipments, displacing France; France, from first to fourth place in both tonnage and value of shipments; Italy, from fourth to second place in value of shipments, and from third to second in tonnage; Spain, from second to third place in both value and tonnage of shipments.

Canada, formerly not a large shipper of soap, is now coming to the fore rapidly, the report states, and in 1935 was this country's largest single supplier of soap, due to unusual shipments of "soap and powder not specially provided for" in the Foreign Commerce Reports. Despite the checking of these shipments by the enactment of a new provision of the Revenue Act in 1936, Canadian shipments are increasing in the general lines.

—— ♦ ——

P. & G. Outing August 5

Dividend day for Cincinnati employees of Procter & Gamble Co. is to be celebrated August 5. The 104th semi-annual celebration, scheduled for employees and their families, calls for a program of field and water events, with cash prizes for the winners. Attendance is expected to reach 15,000, with most of the celebrators making the trip to Coney Island by boat. Department heads at the Ivorydale plant on the committee of arrangements are: T. S. Eagan, T. H. Thompson, C. J. Fahnle, J. Robinson and W. W. Blaesi.

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Wants Soap Agency

A firm in Baghdad, Iraq, is interested in the establishment of an agency for the sale of American manufactured toilet soaps. Further information may be obtained by making application to the U. S. Bureau of Foreign and Domestic Commerce, Washington, D. C., referring to File No. 2527.

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Guenther Returns from Trip

Dr. Ernest Guenther, chief research chemist, Fritzsche Bros., Inc., New York, has just returned from an extended flying trip through the West Indies, Central and South America. At various points along the way he studied the production of oil of sweet orange, oil of limes, oil of pimenta, oil of petitgrain, etc.

DUROFIX . . . A special fixative for scented soaps . . . Protects and prolongs fragrance indefinitely . . . Does not alter odor-character or add to cost . . . Mixes readily with all essential oils and aromatic chemicals . . . Will not discolor white soaps . . . Is highly effective in liquid soaps and bath salts . . . Write for samples and further details . . . Improve your soap with DUROFIX!

JAVOLLAL . . . An effective substitute for citronella . . . More powerful and economical . . . Widely used in solid, liquid and powdered soaps and in technical mixtures . . . Its effect, after incorporation, much more pleasing than natural oil . . . Latter changes odor . . . JAVOLLAL retains original clean, refreshing perfume . . Combined with other essences, produces attractive odor-variations. . . .

RESINOIDS . . . Are natural extractions from gums, resins, drugs and balsams . . . Represent a superlative means of fixation . . . Employed in soap perfuming for that purpose and for odor-value as well . . . Highly concentrated, with all inert materials removed . . . Possess full aromatic content and fixative properties of respective crude materials . . . Impart true, characteristic perfume note of each. . . .

LAVANDIN and LAVENDER CONCRETE . . .

Two valuable perfume materials for the soap manufacturer . . . Former, a hybrid, resembles lavender more closely than does spike lavender . . . Admixture with LAVENDER CONCRETE increases fixation and enhances fragrance . . . Combination of two produces lavender note of new and attractive character . . . That's an idea for some large soap manufacturer! . . . May we submit samples?

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

A *Fritzsche* PRODUCT for EVERY PURPOSE . . .

- **ESSENTIAL OILS**

  Your basic materials should be the finest that modern methods and scientific skill can produce. In using FRITZSCHE'S Essential Oils you are assured matchless purity and dependability.

- **AROMATIC CHEMICALS**

  Large selection and superlative quality characterize the materials in this group. Use them for finer aromatic effects and for greater economy.

- **FIXATIVES**

  We carry a complete line of fixatives, including Rose Crystals, one of the best all-around fixatives, also a group of Artificial Animal Scents—Musk, Civet, Castoreum and Ambergris—especially adaptable to soap making.

- **ANTI-OXIDANTS**

  These recently developed preservatives for soaps, animal and vegetable fats and oils are highly important to the soap manufacturer. Write us for full details concerning Oxidex.

- **BATH SALT PERFUMES**

  Combining perfume and color, our delightful Bath Perstels greatly simplify and facilitate the process of manufacture. Very economical. Complete information and list of blends will be sent upon request.

- **INSECTICIDES AND DISINFECTANTS**

  All materials offered by us under this heading are the results of years of research applied to this increasingly important phase of perfuming. Selection from the FRITZSCHE catalog assures uniform and unvarying quality of odor.

- **DEODORIZING COMPOUNDS**

  Technical products such as para blocks, naphthalene, cleansers, waxes, polishes, solvents, diluents, etc., require good, dependable deodorizing compounds in their formulae. For effective, low cost coverage we offer and recommend Neutroleum, Safrella, Javollal, Methalate "C", and others.

- **TOILET SOAP COMPOUNDS**

  Perfumes in this group have been specially prepared to meet the exacting demands of soap manufacture. Exquisite scents at a minimum cost. Consult our catalog.

- **LIQUID SOAP AND SHAMPOO PERFUMES**

  These perfumes are highly soluble and mix readily with liquid soaps. Simple to use, cost limits and strength of odor desired determine quantity required.

- **DENTAL AND ORAL FLAVORS**

  These flavors are of a special character, skillfully blended to impart pleasant, clean, refreshing taste effects. We are prepared also to create special flavor blends according to your specifications and for your exclusive use. Consult us freely.

- **SOAP COLORS**

  We supply soap colors to produce any desired tint. Send us description or sample of color to be matched for our specific recommendations.

SEND FOR SAMPLES

Avon Expands on Coast

Avon Products, Inc., a subsidiary of Allied Products, Inc., of New York, soaps and toiletries, has taken a five-year lease on a one-story brick and concrete structure at 2821 Olympic Blvd., Los Angeles, for warehousing and general office use of its Pacific Coast headquarters. The building contains 20,000 square feet of floor space. The rental for it and proposed modernization involve an outlay of $26,000. At present the firm employs 200 salesmen in the Los Angeles area and 3,000 in the Pacific Coast territory. Expansion plans provide for an increase in the sales force on the west coast to approximately 4,000.

Canadian Perfumers Convention

The Annual Convention of the Association of Canadian Perfumers and Manufacturers of Toilet Articles was held at the Seigniory Club, Montebello, Province of Quebec, June 5th and 6th. The new officers elected for the coming year are: Arnold Dahl, Elizabeth Arden, Ltd., president; R. Hollenbeck, Colgate-Palmolive-Peet Co., vice-president; J. G. Stenhouse, Bristol-Meyers Co., vice-president, and Marvin Shaw, Noxzema Co., Ltd., treasurer.

M. B. Zimmer Dies

Michael B. Zimmer, Chicago representative of Fritzsche Bros., Inc., New York, died suddenly of a heart attack at his home on July 16th. A brother of Ben F. Zimmer, vice-president in charge of the company's Chicago office, he was 70 years of age and had been connected with the Fritzsche organization for more than twenty-five years. At one time he served as president of the Chicago Drug and Chemical Association. He is survived by three daughters and a son.

Martin Blake Dies

Martin Blake, New Britain, Conn. soap executive with headquarters in Mexico City, died when he fell from his room at the Hotel New Yorker, New York, early last month. He was thirty years of age.

"I put the responsibility for new container ideas up to the people best suited for the job. That's the only way! It takes long study to develop container improvements. It takes skill and intense interest. American Can Company has all that—plus the ability to work hand in glove with us. That's why I've been their customer for years—and why I'm first with new container ideas!"

CANCO AMERICAN CAN COMPANY, 230 PARK AVENUE, NEW YORK, N. Y.

Contracts Awarded

Fort Mason Awards

The following awards were made in a recent opening by the U. S. Army Quartermaster at Ft. Mason, Calif. R. M. Hollingshead Corp., Camden, N. J., 2.000 pts. liquid metal polish at 6.9c; Jos. Dixon Crucible Co., Jersey City, N. J., 5.040 cakes stove polish at 4.52c; Newell-Gutradt Co., San Francisco, 2.000 cakes grit soap, Type A at 2.5c, 10,000 cakes grit soap, Type B, at 2.3c and 9.000 lbs. laundry soap at 2.85c.

Brooklyn Cresol Award

Crystal Soap & Chemical Co., Philadelphia, was awarded the contract on 3,000 drums cresol at $3.927, in a recent opening by the Medical Section at Brooklyn, N. Y.

Treasury Soap Bid

Kirkman & Son, Brooklyn, submitted the low bid of 5.4c on 60,000 lbs. soap in a recent opening by the Treasury Procurement Supply at Washington, D. C.

Ft. Sam Houston Soap Award

Gillam Soap Works, Fort Worth, Tex., were awareded the contract on 36,000 lbs. of laundry soap powder at .0588 cents, in a recent opening by the War Department at Fort Sam Houston, Tex.

Veterans Soap Award

Conti Products Corp., New York, were awarded the contract on 84 cartons soap at $121.80 in a recent opening by the Veterans Adm. Supply Department at Washington, D. C.

Medical Corps Soap Award

Armour & Co., Chicago, were awarded the contract on 1,000 drums dishwashing compound at $26.97 in a recent opening by the Army Medical Corps at Brooklyn, N. Y.

Washington Soap Bid

Diamond Alkali Co., Pittsburgh, submitted the low bid of $1.349 cwt. on 90,000 lbs. soap in a recent opening by the Treasury Procurement Supply at Washington, D. C.

Glycerine Bid

Procter & Gamble Distributing Co., Cincinnati, submitted the low bid of $936 on 7,200 lbs. glycerine in a recent opening by the Veterans Administration Supply at Washington, D. C.

Soap Bids

Iowa Soap Co., Burlington, Iowa, submitted the low bid of 10c on 10,000 lbs. toilet soap in a recent opening by the Treasury Procurement Supply at Washington, D. C. At the same opening, Sterling Supply Corp., Philadelphia, bid low on 10,000 lbs. laundry soap at $5.21 cwt.

Cotton Mops Award

Southern Mills Corp., Oxford, Ala., was awarded the contract on 10,008 cotton mops at 17c in a recent opening by the U. S. Army Quartermaster at Ft. Mason, Calif.

Marine Corps Bids

The following low bids were made in a recent opening by the U. S. Marine Corps at Washington, D. C. Alex C. Ferguson Co., Philadelphia, 3.19c on 8,125 lbs. detergent, and 3.58c on 7,475 lbs. detergent; American Soap & Washoline Co., Cohoes, N. Y., 3.97c on 1,625 lbs. detergent.

Carbolic Soap Award

Conray Products Co., New York, was awarded the contract on 1,670 lbs. carbolic soap at 12.2c in a recent opening by the Interior Department at St. Louis, Mo.

India Soap Imports Down

Imports of soap into India during the past ten years have diminished by 88 per cent. In 1929-30 India imported 343,460 cartons of soap and in 1937-38 this figure had dropped to only 41,538. The obvious reason, of course, is the sharp increase in domestic production during that same period. The present output of Indian soap factories has been estimated at 50,000 to 70,000 tons, which is an increase of 250 per cent as compared with pre-war years. The main factor in this sharp increase has been the inexhaustible supply of natural fats which are at India's very doorstep. The demand for coconut oil is so great that the Indian supply of copra has run out and increasing amounts have had to be imported from Ceylon. At present India imports about 20,000 tons of caustic soda for soap making, but this figure will be cut down appreciably when domestic manufacture is started. It is expected that a plant will be laid down shortly.

Ammonium Wetting Agents

Special wetting agents are made by causing organic sulfonic acids or acid sulfuric esters having wetting power *per se* to react with salts of quaternary ammonium bases. In an example a sulfonation product of oleic acid diethylamide is caused to react with the ammonium salt prepared by the reaction of trimethylamine with 2,4-diisopropylbenzyl chloride. I. G. Farbenindustrie A.-G. British Patent No. 499,203.

High Sulfonation Oils

Sulfonated oils of increased SO_3 content are obtained by treating sulfonated materials such as sulfonated olive oil, oleic acid, castor oil, grain oil, fish oils or linseed oil, to an extraction with a selective organic solvent such as ethylene dichloride or dichloroethyl ether. National Oil Products Co. French Patent No. 834,571.

Seaweed Soap

A soap suitable for laundry or toilet use is made by adding to ordinary soap while in a molten or softened state the viscid matter naturally contained in seaweed, especially in seaweed pods. Herbert A. Couchman. British Patent No. 498,692.

PRICE'S STEARIC ACID

Triple Pressed

PREPARED FROM THE FINEST MATERIALS AND ENTIRELY FREE FROM ADULTERANTS

PRICE'S *triple pressed* STEARIC ACID is used by leading manufacturers of the finest toilet preparations, shaving creams and toilet soaps.
Of guaranteed English manufacture, it is highly crystalline and white in color.
Melting point is 130°-133° Fahrenheit.
World famous for its unvarying uniformity in quality.
Packed in slabs of about one inch thickness in double burlap bags with a third protective inner bag forming a muslin liner.

Quotations for carloads or less upon application to exclusive American Representatives:

ORBIS

PRODUCTS CORPORATION

215 PEARL STREET, NEW YORK - FACTORY & LABORATORY, NEWARK, N.J.

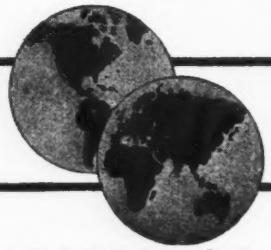
CHICAGO
831 N. Wabash Ave.

PHILADELPHIA
610 Brown Building

BOSTON
89 Broad Street

MEMPHIS, TENN.
1620 Carr Ave.

Water Soluble Gums	Waxes	Cosmetic Raw Material	Fruit Flavors
Filter Paper	Stearic Acid	Oleo Resins	Food Colors
Aromatics	Essential Oils	Perfume Bases	Quince Seed
Rice Starch	Zinc Oxide French	Olive Oil	Irish Moss



MANUFACTURED BY PRICE'S OF LONDON, ENGLAND

New Trade Marks

The following trade-marks were published in the July issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

HOLLYWOOD EXTRA—This in script letters describing oil shampoo. Filed by The Rabin Co., Los Angeles, March 6, 1939. Claims use since Jan. 1, 1935.

GENERAL ELECTRIC—This in solid letters describing washing compounds. Filed by General Electric Co., Schenectady, N. Y., Jan. 31, 1939. Claims use since 1932.

TRISOPHO "N"—This in solid letters describing cleaners. Filed by Joseph C. McNally, Portland, Ore., Feb. 14, 1939. Claims use since June 10, 1938.

KLIHEN—This in solid letters describing liquid insecticide. Filed by Klihen Co., New York, Jan. 30, 1939. Claims use since Jan. 1, 1939.

E-D-E—This in stenciled letters describing insecticides. Filed by General Chemical Co., New York, April 13, 1939. Claims use since Sept. 14, 1938.

BIO-TEX—This in solid letters describing shampoo. Filed by The Bio-Tex Distributing Corp., Youngstown, O., May 1, 1939. Claims use since Nov. 1, 1938.

ELTEE—This in script letters describing tooth paste. Filed by The Sheffield Co., New London, Conn., May 12, 1939. Claims use since March 18, 1936.

A-M-R—This in relief letters over fanciful portrait of man, describing glass cleaner and polish. Filed by A-M-R Chemical Co., Brooklyn, April 1, 1938. Claims use since March 1, 1930.

D AND A—This in relief letters describing cleaner. Filed by The National Broom Mfg. Co., Pueblo, Colo., April 17, 1939. Claims use since Jan. 1, 1939.

ZYFO—This in solid letters describing soap and polish. Filed by Industrial Soap Co., St. Louis, April. 29, 1939. Claims use since Dec. 31, 1938.

VEL-GLO—This in solid letters describing hair shampoo. Filed by Ultra Chemical Works, Inc., Paterson, N. J., Aug. 25, 1938. Claims use since Aug. 15, 1938.

NO-DE-KA—This in solid letters within lined circle, describing tooth powder. Filed by No-De-Ka Co., Los Angeles, Sept. 19, 1938. Claims use since Aug. 6, 1925.

META—This in solid letters describing insecticides and disinfectants. Filed by Lonza Elektrizitatswerke und Chemische Fabriken Aktiengesellschaft, Gampel and Basel, Switzerland, Sept. 26, 1938. Claims use since July, 1937.

MoM—This in relief letters describing insecticides. Filed by Laboratori Chimici Candioli Soc. An., Livorno, Italy, March 3, 1939. Claims use since May, 1923.

PERK—This in outline letters describing granulated soap. Filed by Armour & Co. of Delaware, Chicago, May 11, 1939. Claims use since April 18, 1939.

HYDRALENE—This in solid letters describing solvent cleaner. Filed by The Curran Corp., Malden, Mass., May 11, 1939. Claims use since 1933.

ELTEE—This in script letters describing shaving cream. Filed by The Sheffield Co., New London, Conn., May 12, 1939. Claims use since Nov. 7, 1936.

NATURELLE — This in solid letters describing shampoo oils. Filed by American Beauty Products Co., Chicago, Oct. 5, 1938. Claims use since May, 1937.

TRUE LOVE—This in solid letters describing shampoo. Filed by Famous Products Co., Chicago, Feb. 9, 1939. Claims use since Nov. 2, 1937.

LAST LUNCH—This in solid letters describing rat exterminator. Filed by Smithereen Co., Chicago, April 24, 1939. Claims use since 1888.

WEEVI-KIL—This in solid letters describing insecticides. Filed by The Selig Co., Atlanta, Ga., April 2, 1939. Claims use since April 2, 1934.

GRANITIZE SOLUTION—This in solid letters describing automobile cleaner. Filed by Granitize Laboratories, Burlingame, Calif., March 1, 1939. Claims use since March 15, 1938.

ECLAR—This in script letters describing cleaning preparation. Filed by Thodenol Soap Corp., New York, March 18, 1939. Claims use since Feb. 6, 1939.

T.L.S.—This in solid letters describing cleansing preparation. Filed by Thodenol Soap Corp., New York, March 25, 1939. Claims use since Feb. 6, 1939.

THODENOL—This in solid letters describing cleansing preparation. Filed by Thodenol Soap Corp., New York, March 25, 1939. Claims use since Feb. 6, 1939.

JERIS (Homogenized) — This in solid letters with "Homogenized" below "Jeris," describing shaving cream. Filed by Ar. Winarick, Inc., New York, April 5, 1939. Claims use since March 3, 1939.

FRACONE—This in solid letters describing soaps. Filed by F. Reinitz & Co., New York, April 22, 1939. Claims use since March 9, 1939.

GARDEN HERB SHOP—This in script letters describing soaps. Filed by Bloomingdale Bros., New York, May 9, 1939. Claims use since March 16, 1939.

MACKWIN—This in solid letters describing insecticide. Filed by The Mackwin Co., Winona, Minn., May 19, 1939. Claims use since May 1, 1939.

SUPER-GLOSS — This in solid letters describing floor wax. Filed by Robert Ramseur, Bremerton, Wash., April 22, 1939. Claims use since Dec. 1, 1938.

THIS IS AN ABC PAPER!

WHAT DOES THAT MEAN TO THE ADVERTISER?

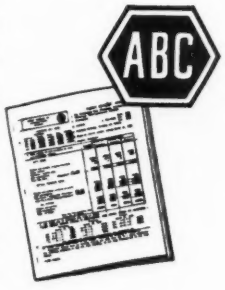
The A.B.C. of Circulation:
How much? Where? How Secured?

TO knowing advertisers, an A.B.C. paper means a publication whose advertising value can be authentically gauged through audited circulation reports . . . complete, concise A.B.C. reports.

Issued at regular intervals by auditors controlled and paid by the Audit Bureau of Circulations, A.B.C. reports reveal and analyze NET PAID CIRCULATION—the true measure of advertising value.

A.B.C. reports answer the three vital circulation questions: how much is there? Where is it? How was it secured?

Before you buy space in this or any other publication, do two things. Make sure the publication is an A.B.C. member. (Space bought in a publication not a member of A.B.C. is at best a speculation.) Then, study the A.B.C. report. See how the extent and nature of the circulation meet your requirements. Now, you can buy—knowing that you are making a sound advertising investment.



We will be glad to send you a copy of our latest A.B.C. report. It gives you the facts about the circulation you buy in this paper.

SOAP and SANITARY CHEMICALS *An A. B. C.—A. B. P. PUBLICATION*

A.B.C. = Audit Bureau of Circulations = FACTS as a yardstick of advertising value

KOLENE — This in stenciled letters describing cleaning solvent. Filed by Webster-Walsh Co., Detroit. March 6, 1939. Claims use since Jan. 5, 1939.

NU IZ—This in solid letters superimposed upon a drawing of a diamond. Filed by C. L. Shorts, West Alexander, Pa., May 6, 1939. Claims use since April 20, 1939.

PROM—This in script letters describing shoe polishes. Filed by Geo. J. Kelly, Inc., Lynn, Mass., May 8, 1939. Claims use since Aug. 11, 1938.

MIST-O-DETH—This in solid letters describing insecticide. Filed by New Chemical Products Co., Washington, D. C., April 7, 1939. Claims use since Feb. 15, 1939.

MOTHANE—This in solid letters describing insecticides. Filed by The Selig Co., Atlanta, Ga., April 26, 1939. Claims use since Nov. 16, 1935.

SELCOFUME—This in solid letters describing insecticides. Filed by The Selig Co., Atlanta, Ga., April 26, 1939. Claims use since Jan. 1, 1938.

MICO—This in solid letters describing insecticides. Filed by Miller Fertilizer & Chemical Corp., Baltimore, April 27, 1939. Claims use since May 1, 1938.

PLANET—This in relief letters describing liquid floor wax. Filed by Biltmore Paper Co., New York, May 6, 1939. Claims use since Feb. 20, 1939.

Trade Marks Granted

368,128. Chemical Detergent. Onyx Oil & Chemical Co., Jersey City. Filed February 8, 1939. Serial No. 415,791. Published March 28, 1939. Class 6.

368,202. Soap. Bullock's, Inc., Los Angeles. Filed March 30, 1937. Serial No. 390,686. Published April 4, 1939. Class 4.

368,204. Liquid Floor Wax. Thompson Chemical Co., Cranston, R. I. Filed October 2, 1937. Serial No. 398,041. Published April 4, 1939. Class 16.

368,225. Floor Wax. R. A. Myers & Co., St. Paul. Filed May 5, 1938. Serial No. 406,027. Published April 4, 1939. Class 16.

368,231. Cleaning Compound. Mahala Brothers, Gary, Ind. Filed June 30, 1938. Serial No. 408,067. Published April 4, 1939. Class 4.

368,280. General Cleanser. Linco Products Corp., Chicago. Filed December 30, 1938. Serial No. 414,356. Published April 4, 1939. Class 4.

368,384. Insecticides. The Selig Co., Atlanta, Ga., assignor to The Fyr-Fyter Company, Dayton, Ohio. Filed November 1, 1938. Serial No. 412,269. Published December 27, 1938. Class 6.

368,411. Shaving Cream. S. H. Kress and Co., New York. Filed April 23, 1938. Serial No. 405,651. Published April 11, 1939. Class 4.

368,426. Combination Set Consisting of a Mug and Soap. Shulton, Inc., New York. Filed November 12, 1938. Serial No. 412,675. Published April 11, 1939. Class 50.

368,451. Cleaning Compound. North Distributing Co., Houston, Tex. Filed January 20, 1939. Serial No. 415,054. Published April 11, 1939. Class 4.

368,492. Shaving Cream. Red Arrow Laboratories, Waco, Tex. Filed February 11, 1939. Serial No. 415,963. Published April 11, 1939. Class 4.

368,580. Toilet Soaps. Hearn Department Stores, Inc., New York. Filed March 29, 1938. Serial No. 404,607. Published July 19, 1938. Class 4.

368,593. Shoe Polishes. Trimfoot, St. Louis, Mo. Filed August 19, 1938. Serial No. 409,797. Published April 18, 1939. Class 4.

368,597. Spot Remover. Thomas Fuller Torrey, Lynchburg, Va. Filed September 7, 1938. Serial No. 410,345. Published November 1, 1938. Class 4.

368,610. Bleaching Preparation having cleaning properties. James Johnson Earshen, Buffalo. Filed October 28, 1938. Serial No. 412,076. Published April 11, 1939. Class 6.

368,615. Shampoo Preparation. Powell Distributing Co., Philadelphia. Filed November 7, 1938. Serial No. 412,461. Published January 10, 1939. Class 6.

368,653. Liquid Detergent. The Morton S. Pine Co., Cleveland. Filed January 13, 1939. Serial No. 414,798. Published April 18, 1939. Class 4.

368,662. Silver Polish. Sealco By-Products Co., Bluefield, W. Va. Filed January 17, 1939. Serial No. 414,926. Published April 18, 1939. Class 4.

368,743. Soaps. The Emfo Corp., New York. Filed February 15, 1939. Serial No. 416,057. Published April 18, 1939. Class 4.

368,744. Soaps. The Emfo Corp., New York. Filed February 15, 1939. Serial No. 416,058. Published April 18, 1939. Class 4.

368,770. Hair Tonic. Antonio Bilotti, Clifton Heights, Pa. Filed February 23, 1939. Serial No. 416,308. Pub. April 4, 1939. Class 6.

368,773. Toilet Soap. George M. Litsch, Mahanoy City, Pa. Filed February 23, 1939. Serial No. 416,329. Pub. April 1, 1939. Class 4.

368,837. Soaps. Hercules Powder Co., Wilmington, Del. Filed October 28, 1938. Serial No. 412,141. Published April 25, 1939. Class 4.

368,875. Glass Cleaner. Salem Chemical & Supply Co., Salem, Mass. Filed January 28, 1939. Serial No. 415,353. Pub. April 25, 1939. Class 4.

368,879. Shoe Polishes. Le Cliff Distributing Co., Cedar Lake, Ind. Filed February 2, 1939. Serial No. 415,517. Published April 25, 1939. Class 4.

368,924. Cleanser. The Diversey Corp., Chicago. Filed March 1, 1938. Serial No. 416,550. Published April 25, 1939. Class 4.

368,925. Cleanser. The Diversey Corp., Chicago. Filed March 1, 1939. Serial No. 416,551. Published April 25, 1939. Class 4.

369,057. Soap. Antoine de Paris, Inc., New York, N. Y. Filed February 24, 1939. Serial No. 416,360. Published May 2, 1939. Class 4.

369,149. Hair Shampoo. The absolute Co., Ottumwa, Iowa. Filed November 28, 1938. Serial No. 413,241. Published May 2, 1939. Class 6.

(*Turn to Page* 127)

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Perfume Oil Lilas Vegetal L.S. Aristocratic lilac.
Perfume Oil Lilas Blanc L.S. Masculine odor.
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MAC NAIR-DORLAND CO.
254 WEST 31st STREET
NEW YORK

Raw Material Markets

As of July 25, 1939

NEW YORK — The soap and sanitary chemical market was characterized by numerous price revisions this period. Leading the number of changes were those in the oils and fats list where the trend in prices was definitely downward. Not one raw material in this list showed an advance in price. Coconut, corn, linseed, and soybean oil were all included in the reductions as were most of the fatty acids. The most striking price change took place in the insecticide raw material market where pyrethrum powder advanced five cents per pound. The chemical and the essential oil list, as usual, exhibited few changes of note.

CHEMICALS

Naphthalene

Although most of the business in refined naphthalene was taken care of before the warm weather, replacement orders of this raw material provided the market with a satisfactory amount of business. A reduction of 5 cents per 100 pounds took place in the price of the crude material in the early part of the period, but this was recovered by an advance in the later part.

Phenol

Selling schedules in this market were lowered this period, the price range in drums being 13 to 13 3/4 cents per pound. This compares with the previous quotations of 14 1/2 to 15 1/2 cents per pound. Demand from major consuming channels was not expanding, and shipments against contracts were confined to necessary replacements as a rule.

Rosin

Prices on some grades of rosin moved up as much as 35 cents per barrel this period, reversing the downward movement of the previous period. The market, on the whole, had a steady tone with a fair amount of inquiry. Withdrawals were in comparatively small quantities to fill the current needs of consumers and dealers.

OILS AND FATS

Coconut Oil

Prices on coconut oil continued their downward trend of the past few periods, the reduction amounting to 1/8 cent per pound this period. The present New York quotation stands at 3 cents per pound as compared to 3 1/8 cents per pound last period. Futures on the Pacific Coast are being quoted at 2 5/8 to 2 3/4 cents per pound, which amounts to a 1/4 cent reduction from the previous period. The tone of the market appeared to be fairly steady with business slow.

Soya Bean Oil

There was a reduction in the price of soya bean oil this period. The present range being 5 to 5 1/8 cents per pound as compared with 5 1/2c the previous period. The acreage of soybeans grown in the United States in 1939 is estimated at 8,119,000 acres, the largest ever planted in this country.

Tallow

The tallow market was characterized by an easy tone in the early part of this period. Price quotations were shaded 3/8 cents per pound on city extra and special. The present levels are 4 5/8 cents per pound for special, and 4 3/4 cents for city extra. A steady tone prevailed at the end of the period with inquiries fair, and offerings light.

Grease

Prices on grease were also reduced 3/8 cents per pound. Choice white greases are being quoted at 4 7/8 to 5 cents per pound, and yellow greases at 4 1/8 to 4 3/8 cents per pound. Consumers, as a rule, are disposed to limit their takings to comparatively small quantities.

PERFUMING MATERIALS

Cassia Oil

Very firm prices characterized the cassia oil market this period, especially in view of the military and political situation affecting the British crown colony of Hongkong. Demand was moderate to light with larger consumers disposed to hold off. New quotations are 88 to 93 cents per pound as compared to the previous range of 85 to 90 cents per pound.

Citronella Oil

Under competitive conditions, quotations on Ceylon oil were slightly lower at 31 to 33 cents per pound in drums. This compared with the previous quotation of 33 to 34 cents. It is essentially a buyer's market, with low prices and plentiful stocks on hand.

Eucalyptus Oil

Prices of eucalyptus oil moved downward this period, but not enough to completely offset the advance noted during the last period. Quotations are now at 41 to 45 cents per pound as compared with 43 to 44 cents for the period before. The season for largest consumption of this product lies ahead.

INSECTICIDE MATERIALS

The insecticide raw material market was characterized by sharp increases in the price of pyrethrum powder and concentrated extract this period. Insect powder is being quoted at 35 to 37 cents per pound in barrels as compared to the former price of 30 and 31 cents. Concentrated extract 5 to 1 is quoted at $2.00 to $2.10 per pound as compared to the previous range of $1.60 to $1.70; 20 to 1 extract at $7.45 to $7.50 per pound as against $6.25 to $6.35 for the last period, and 30 to 1 grade at $11.10 to $11.25 against $9.20 to $9.35 for the earlier period. Prices for derris and cube remained unchanged during the period under review.

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The Industrial Chemistry of Fats and Waxes, by Hilditch. A study of the fats and waxes in relation to their use in industry. 450 pages, $7.50.

Hydrogenation of Organic Substances, by Ellis. 1930 revised edition of this well-known book, pre-eminent in the field of hydrogenation. 990 pages, $15.00.

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254 West 31st Street, NEW YORK CITY

Raw Material Prices

(As of July 24, 1939)

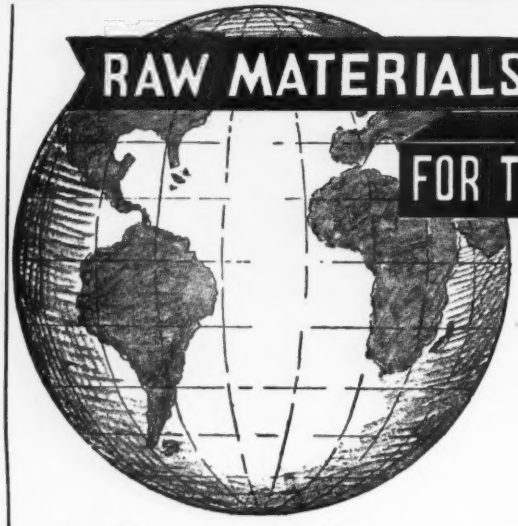
Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .05¾	$ .06¼
Acid, Boric, bbls., 99½%	ton	106.00	138.00
Cresylic, drums	gal.	.49	.50
Low boiling grade	gal.	.55	.56
Muriatic, C. P., carboys	lb.	.06½	.08
Oxalic, bbls.	lb.	.10¾	.12
Adeps Lanae, hydrous, bbls.	lb.	.16	.18
Anhydrous, bbls.	lb.	.17½	.19
Alcohol, Ethyl, U.S.P., bbls.	gal.	4.56½	4.59½
Complete Denat., SD 1, drums, ex.	gal.	.27½	.30½
Alum, Potash lump	lb.	.036	.038
Ammonia Water, 26°, drums	lb.	.02	.02¼
Ammonium Carbonate, tech., bbls.	lb.	.08	.12½
Bentonite, 1, works	ton	—	16.00
Bentonite, 2, works	ton	—	11.00
Bleaching Powder, drums	100 lb.	2.25	3.35
Borax, pd., cryst., bbls., kegs	ton	58.00	74.00
Carbon Tetrachloride, car lots	gal.	.66½	.83
L. C. L.	gal.	.73	1.17
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	25.00
Cresol, U.S.P., drums	lb.	.10	.10½
Creosote Oil	gal.	.13½	.14½
Feldspar (200 to 325 mesh)	ton	14.00	15.00
Formaldehyde, bbls.	lb.	.05¾	.06¼
Fullers Earth	ton	10.00	30.00
Glycerine, C. P., drums	lb.	.12½	.13
Dynamite, drums	lb.	—	Nom.
Saponification, drums	lb.	.09	.10
Soap, lye, drums	lb.	.07¾	.07⅞
Hexalin, drums	lb.	—	.30
Kieselguhr, bags	ton	—	35.00
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	per bbl.	—	2.45
Mercury Bichloride, kegs	lb.	.99	1.13
Naphthalene, ref. flakes, bbls.	lb.	.05¾	.06
Nitrobenzene (Mirbane) drums	lb.	.08	.09
Paradichlorbenzene, bbls., kegs	lb.	.12½	.15½
Petrolatum, bbls. (as to color)	lb.	.02⅝	.03⅞
Phenol (Carbolic Acid), drums	lb.	.13	.13¾
Pine Oil, bls.	gal.	.50	.59
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	.07½
Liquid, 45% basis	lb.	.03⅛	.03¼
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.03	.03½
Pumice Stone, powder	100 lb.	3.00	4.00
Rosins (600 lb. bbls. gross for net)—			
Grade B to H, basis 280 lbs.	bbl.	4.60	6.55
Grade K to N	bbl.	6.55	6.70
Grade WG to X	bbl.	7.15	7.50
Wood	bbl.	4.10	5.72½
Rotten Stone, pwd. bbls.	lb.	.01¾	.02½
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04½
Olive Castile, bars	lb.	.27½	.30
Olive Castile, powder	lb.	.27	.38
Powdered White, Neutral	lb.	.20	.22
Olive Oil Foot, bars, 68-70%	lb.	.09	.09½
Green, U.S.P.	lb.	.11	.13½
Tallow Chips, 88%	lb.	.07⅝	.07⅞
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.08	1.35
Car lots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	—	2.30
Flake	100 lb.	—	2.70
Liquid, tanks, 47-49%	100 lb.	—	1.95
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	15.00	15.60
Sodium Fluoride, bbls.	lb.	.07½	.08¾
Sodium Hydrosulfite, bbls.	lb.	.16	.17
Sodium Metasilicate, ground	100 lb.	2.20	3.15
Crystalline	100 lb.	2.90	4.20
Sodium Pyrophosphate	100 lb.	5.10	5.55
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.21	.28
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	lb.	.02	.026
Zinc Oxide, lead free	lb.	.06½	.07¾

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.06⅛	Nom.
Castor, No. 1, bbls.	lb.	.08¾	.09½
No. 3, bbls.	lb.	.08¼	.09
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.03	—
Tanks, Pacific Coast, futures	lb.	.02⅝	.02¾
Copra, bulk, coast	lb.	.0175	—
Corn, tanks, mills	lb.	.05⅜	.05½
Cottonseed, crude, tanks, mill	lb.	.05¾	.05⅞
PSY, futures	lb.	.07	.07¼
Fatty Acids,			
Corn Oil, tanks	lb.	.08¼	.08½
Coconut Oil, tanks	lb.	.08	.08¼
Cotton Oil, tanks	lb.	.07¼	.07½
Settled soap stock	lb.	.02¾	.03
Boiled soap stock, 65%	lb.	.03¾	.04
Foots, 50%	lb.	.01¼	.01½
Linseed Oil	lb.	.10	.10½
Red Oil, bbls., dist. or sapon.	lb.	.07⅜	.08⅛
Tanks	lb.	.06½	.07½
Stearic Acid,			
Double pressed	lb.	.10½	.11½
Triple pressed	lb.	.13½	.14½
Greases, choice white, bls.	lb.	.04⅞	.05
Yellow	lb.	.04⅛	.04⅜
Lard, city	lb.	.05¾	.06
Linseed, raw, bls.	lb.	.0930	.0950
Tanks, raw	lb.	.0830	.0850
Boiled, 5 bbl. lots	lb.	.1010	.1030
Olive, denatured, bbls., N. Y.	gal.	.84	.85
Foots, bbls., N. Y.	lb.	.07	.07⅛
Palm, shipment	lb.	.03	—
Palm Kernel, shipment	lb.	.0340	Nom.
Sesame Oil, dms.	lb.	.09	.09¼
Soya Bean, domestic tanks, crude	lb.	.05	.05⅛
Stearine, oleo, bbls.	lb.	.05½	.05¾
Tallow, special, f.o.b. plant	lb.	.04⅝	—
City, ex. loose, f.o.b. plant	lb.	.04¾	—
Teaseed Oil, crude	lb.	.09½	.09¾
Whale, refined	lb.	.0730	.0750



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Corn Oil	Perilla Oil	Neatsfoot Oil	Caustic Soda	Metasilicate
Cottonseed Oil	Rapeseed Oil	Oleo Stearine	Soda Ash	Tri Sodium Phosphate
Palm Oil	Sesame Oil	Stearic Acid	Caustic Potash	Di Sodium Phosphate
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Bitter, F. F. P. A.	lb.	1.95	2.05
Sweet, cans	lb.	.56	.57
Anise, cans, U.S.P.	lb.	.65	.67
Bay, tins	lb.	1.20	1.25
Bergamot, coppers	lb.	3.65	3.85
Artificial	lb.	1.25	1.30
Birch Tar, rect. tins	lb.	.60	.65
Crude, tins	lb.	.15	.18
Bois de Rose, Brazilian	lb.	1.55	1.60
Cayenne	lb.	1.50	1.75
Cade, cans	lb.	.41	.44
Cajeput, native, tins	lb.	.50	.52
Calamus, tins	lb.	5.50	6.00
Camphor, Sassy, drums	lb.	.28	Nom.
White, drums	lb.	.27	Nom.
Cananga, native, tins	lb.	1.05	1.25
Rectified, tins	lb.	1.50	1.80
Caraway Seed	lb.	1.65	1.70
Cassia, Redistilled, U.S.P.	lb.	.88	.93
Cedar Leaf, tins	lb.	.60	.62
Cedar Wood, light, drums	lb.	.28	.30
Citronella, Java, drums	lb.	.27	.28
Citronella, Ceylon, drums	lb.	.31	.33
Clove, U.S.P., tins	lb.	.97	—
Eucalyptus, Austl., U.S.P., cans	lb.	.41	.45
Fennel, U.S.P., tins	lb.	1.05	1.10
Geranium, African, cans	lb.	2.65	3.50
Bourbon, tins	lb.	2.40	3.00
Turkish	lb.	1.85	2.00
Hemlock, tins	lb.	.65	.70
Lavender, U.S.P., cans	lb.	2.00	4.75
Spike, Spanish, cans	lb.	1.05	1.10
Lemon, Ital., U.S.P.	lb.	3.30	4.00
Cal.	lb.	2.50	—
Lemongrass, native, cans	lb.	.38	.40
Linaloe, Mex., cases	lb.	1.25	1.30
Nutmeg, U.S.P., tins	lb.	1.12	1.15
Orange, Sweet, W. Ind., tins	lb.	1.70	1.75
Italian cop	lb.	2.00	3.00
Distilled	lb.	.50	—
California	lb.	1.00	—
Origanum, cans, tech	lb.	.90	1.00
Patchouli	lb.	3.35	6.50
Pennyroyal, dom.	lb.	2.10	2.15
Imported	lb.	1.85	1.90
Peppermint, nat., cans	lb.	2.05	2.30
Redis., U.S.P., cans	lb.	2.30	2.60
Petitgrain, S. A., tins	lb.	.80	.85
Pine Needle, Siberian	lb.	.95	1.00
Rosemary, Spanish, tins	lb.	.56	.75
drums	lb.	.51	.70
Sandalwood, E. Ind., U.S.P.	lb.	4.75	4.80
Sassafras, U.S.P.	lb.	.90	1.00
Artificial, drums	lb.	.36	.37
Spearmint, U.S.P.	lb.	1.70	1.75
Thyme, red, U.S.P.	lb.	.85	1.25
White, U.S.P.	lb.	.85	1.45
Vetivert, Bourbon	lb.	3.50	15.00
Ylang Ylang, Bourbon	lb.	2.50	3.00

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.30	$1.45
Amyl Cinnamic Aldehyde	lb.	2.00	2.25
Anethol	lb.	1.00	1.05
Benzaldehyde, tech.	lb.	.60	.70
U.S.P.	lb.	.85	.95
Benzyl, Acetate	lb.	.44	.49
Alcohol	lb.	.63	.68
Citral	lb.	1.40	3.10
Citronellal	lb.	.75	.80
Citronellol	lb.	1.60	1.85
Citronellyl Acetate	lb.	4.50	7.00
Coumarin	lb.	2.75	4.65
Cymene, drums	gal.	.90	1.25
Diphenyl oxide	lb.	.50	.55
Eucalyptol, U.S.P.	lb.	.55	.57
Eugenol, U.S.P.	lb.	1.70	2.15
Geraniol, Domestic	lb.	.67	3.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	1.20	2.50
Heliotropin	lb.	1.80	2.20
Hydroxycitronellal	lb.	2.00	2.50
Indol, C. P.	oz.	2.00	2.13
Ionone	lb.	1.30	4.05
Iso-Eugenol	lb.	3.00	4.25
Linalool	lb.	2.10	6.30
Linalyl Acetate	lb.	1.35	2.25
Menthol	lb.	3.00	3.35
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.10	2.30
Paracresol	lb.	4.50	6.00
Salicylate, U.S.P.	lb.	.35	.37
Musk Ambrette	lb.	3.25	3.65
Ketone	lb.	3.40	3.80
Xylene	lb.	1.00	1.25
Phenylactaldehyde	lb.	2.10	3.50
Phenylacetic Acid	lb.	1.75	3.00
Phenylethyl Alcohol	lb.	2.50	3.35
Rhodinol	lb.	5.55	10.80
Safrol	lb.	.50	.53
Terpineol, C. P., 1000 lb. drs.	lb.	.23	.24
Cans	lb.	.25	.30
Terpinyl Acetate, 25 lb. cans	lb.	.77	1.00
Thymol, U.S.P.	lb.	1.40	1.45
Vanillin, U.S.P.	lb.	2.10	2.35
Yara Yara	lb.	1.25	1.56

Insecticide Materials

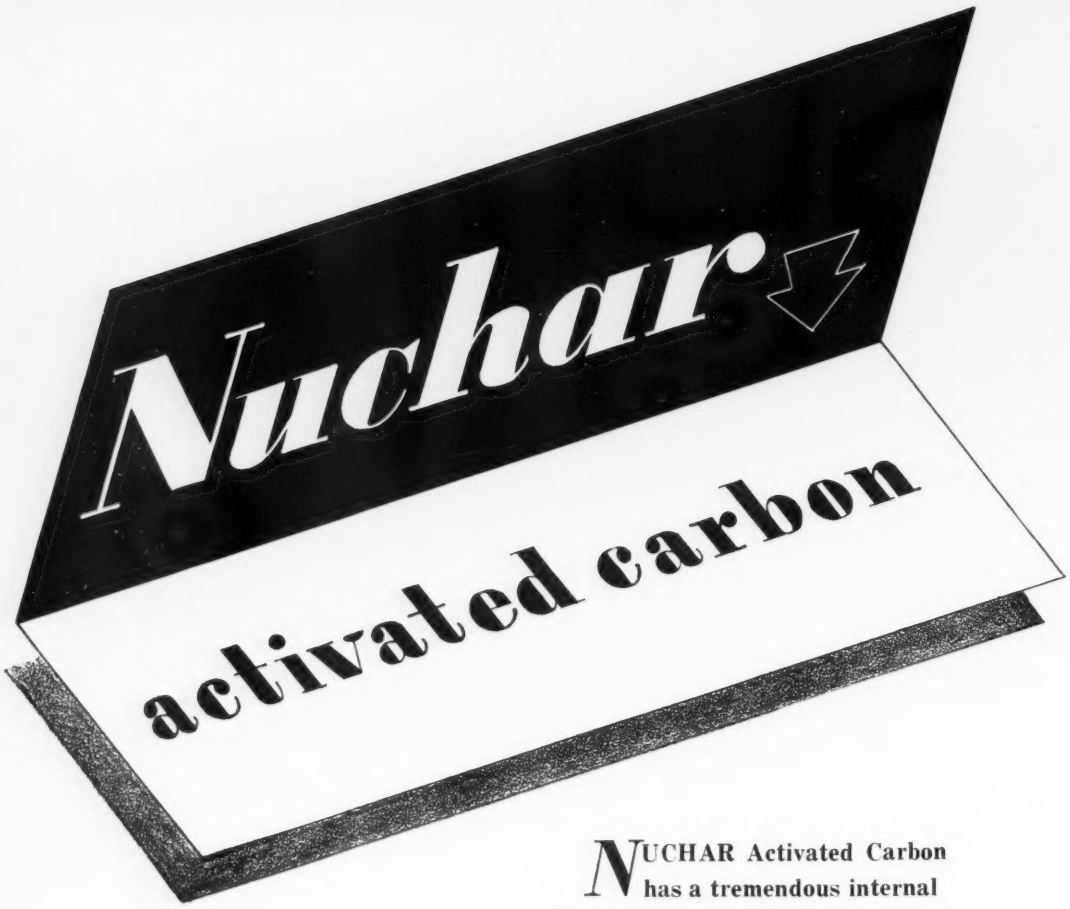
Insect Powder, bbls.	lb.	.35	.37
Concentrated Extract			
5 to 1	gal.	2.00	2.10
20 to 1	gal.	7.45	7.50
30 to 1	gal.	11.10	11.25
Derris, powder—4%	lb.	.18	.28
Derris, powder—5%	lb.	.24	.34
Cube, powder—4%	lb.	.20	.24
Cube, powder—5%	lb.	.24	.28

Gums

Arabic, Amb. Sts.	lb.	.10½	.11
White, powdered	lb.	.13	.14
Karaya, powdered No. 1	lb.	.14	.23
Tragacanth, Aleppo, No. 1	lb.	2.25	2.85
Flake	lb.	.50	1.00

Waxes

Bees, white	lb.	.37	.39
African, bgs.	lb.	.19	.20
Refined, yel.	lb.	.25½	.26
Candelilla, bgs.	lb.	.15½	.16½
Carnauba, No. 1	lb.	.41	.42½
No. 2, N. C.	lb.	.35	.35½
No. 3, Chalky	lb.	.29	.30½
Ceresin, yellow	lb.	.08½	.11½
Paraffin ref. 125-130	lb.	.039	.040



NUCHAR Activated Carbon has a tremendous internal and external surface for the adsorption of odor, color and taste from fats and oils. It has been scientifically estimated that one cubic inch of activated carbon offers a total external and internal surface of 20,000 square yards. When activated carbon is placed in oils and fats containing impurities, these impurities are attracted to the surface of the carbon much the same as a magnet attracts iron filings. All of these impurities are retained in the carbon and subsequently are eliminated when the carbon is removed. The action of activated carbon therefore is a physical rather than a chemical one, and Nuchar can be used in conjunction with other purification methods.

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Production Section

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, *Oil & Fat Industries.*

Fat and Oil Bleaching

BLEACHING of fats and oils may be by physical methods, chemical, or a combination of the two. The principle of physical methods consists of adsorption of the coloring matter present by a suitable powdered material. Various silicate earths are used for the purpose. They must have special adsorptive properties and not affect the oils chemically. Such adsorption usually takes place at 80-90° C., sometimes at 100° C.

Addition of decolorizing earth depends on the material to be bleached. The oil is first purified and then treated in a state as nearly anhydrous as possible, with 0.5 to 5 per cent of adsorptive earth for 15 to 20 minutes. Decolorization in vacuo is preferable as oxidation phenomena can be avoided in this way and the vacuum has no effect on the decolorizing process itself. Of late years activated carbon has been utilized more widely for the decolorization of fats and oils. In order to use activated carbon, the fat or oil must first be freed of all mechanical impurities. Decolorization then takes place under ordinary pressure and the duration of the treatment is about a half-hour.

A number of procedures have been proposed for the treatment of oils with decolorizing earth. According to French Patent No. 582.263, the oil is agitated for several hours at 95° C. with decolorizing earth, then treated at 245-285° C. with superheated steam under greatly reduced pressure, that is, in a high vacuum. Cooling follows in the absence of air. At a pressure of 25 mm. of mercury, free fatty acids and other volatile matter separate. In the case of crude palm oil which is difficult to bleach and which contains about 40 per cent of free fatty acids, 4 per cent of adsorbent earth is added and stirred with the oil for 2 hours. The mixture is then filtered and treated under a pressure of 0.5 atmosphere with superheated steam until the content of fatty acid falls to 0.5 per cent.

Another patent proposes the decolorization of oils by means of a mixture of decolorizing earth and organic material such as sawdust. Another suggestion is the mixing of the earth with an electrolyte such as sodium chloride, calcium chloride, or ferric chloride. The salts coagulate colloidal coloring matter. The patent calls for addition of 10 per cent of Fuller's earth and 1 per cent of electrolyte based on the amount of earth used, with heating of the treated oil to 70° C. A mixture of decolorizing earth and of activated carbon can also be used, good results being obtained with 1 part of carbon to 3 parts of earth.

When oils are very difficult to bleach, chemical methods may be employed. For this, calcium hypochlorite (chloride of lime) containing 50 per cent, or better yet, 60 per cent of active chlorine, is suitable. The hypochlorite is mixed with the fat or oil and heated to 70-90° C. A number of authorities claim that the process is made more effective by the addition of caustic soda, particularly with oils high in free fatty acids. Following decolorization, the oil is separated from solid hypochlorite and lime, and finally from excess chlorine by treatment with superheated steam. The steam treatment can be made first and followed by separation from the slurry.

Hydrogen peroxide has been used with success as a means of chemical bleaching and in some cases has succeeded where other bleaching agents failed. The effectiveness of hydrogen peroxide is due to its liberation of nascent oxygen. Treatment of the fat or oil is usually carried out at a temperature of about 65° C. Thirty per cent (100 volume) hydrogen peroxide is added to the oil in a thin stream, accompanied by energetic stirring. Mixing is continued for 2 to 5 hours. It is very important to avoid an excess of hydrogen peroxide because of the possibility of the excess reacting to form oxyacids.

The amount used should not exceed 0.5-2 per cent.

According to research reports of the Elektrochemische Werke, the action of hydrogen peroxide is appreciably augmented by the addition of 0.1-0.2 per cent of benzoyl peroxide, which corresponds to the solubility of benzoyl peroxide in fats. Oils and fats very high in free acids can be bleached by this method. The method must be applied with considerable caution because of the tendency to reaction of the oxygen with the fatty ingredients. Some authorities consider this method too hard to control while others find it very satisfactory. The former class hold that a catalytic reaction sets in which leads to decomposition and later development of rancidity. R. Fussteig. *Les Matieres Grasses* **31,** 98-100 (1939).

Non-caking T. S. P.

In the manufacture of commercial trisodium phosphate, the caking of the product due to the formation of a mat by the needlelike crystals of the dodecahydrate is a serious problem. A small admixture of fluoride has been used to give a product consisting mainly of octahedral crystals, the granular character of which improves the physical properties of the product. The supposed octahedral $Na_3PO_4.10H_2O$ is shown by analysis and by phase studies to be the double salt $NaF.2Na_3PO_4.19H_2O$. This phase may appear in samples of trisodium phosphate containing as little as 0.1 per cent of sodium fluoride, an amount of impurity not uncommon. C. W. Mason and E. B. Ashcraft. *Ind. Eng. Chem.* **31,** 768-74 (1939).

Aids for Textile Soaps

FOR textile work, soap must be dissolved in water. It would seem a natural procedure to prepare large stocks of concentrated soap solution and to draw from this as required. Unfortunately strong soap solutions do not remain fluid at ordinary temperatures but set to a hard jelly, inconvenient to use. Solutions could be kept hot except for the fact that stoppages would occur at weekends and other shutdown periods. A recent patent states that sodium or ammonium sulfamate, NH_2SO_3Na or $NH_2SO_3NH_4$, prevent jelly formation and render soap solutions fluid at all temperatures. To 10 parts of textile soap flakes dissolved in 1,000 parts of hot water, there is added 1 part by weight of ammonium sulfamate.

These salts also prevent sedimentation and clouding in the case of sulfated fatty alcohols and similar new detergents. This is no doubt due to the fact that all the common salts of sulfamic acid are very soluble in water, including the calcium, magnesium and lead salts. It means that this is probably the ideal agent for removing metallic impurities from textiles. Sulfamates at present are prohibitive in price, but a new and apparently inexpensive method of manufacture from urea and sulfuric acid promises to yield plentiful supplies at a moderate price in the course of time, provided the economic outlets fulfill expectations.

Soap and most other detergents are anion-active; that is, the active group is the anion, which is negatively charged. Quaternary ammonium compounds made by combining pyridine or any other tertiary amine such as trimethylamine, with a halide of a fatty alcohol, are the exact opposite; they are cation-active, the active portion is positively charged.

The behavior of wool washed with the two types of detergents is interesting. Washed in a mildly alkaline solution of soap or of a sulfated fatty alcohol (anionic), cleansing of wool occurs with ease. If a cationic soap is added a reversal takes place and soap and dirt may be re-deposited on the fiber. If wool is washed in a mildly acid solution of a cationic soap, it also cleanses well. But a cationic soap would not wash wool in an alkaline solution, the detergent then being adsorbed by the wool. The stability of the sulfated fatty alcohols and similar detergents to acids has been recognized, but it is not possible to wash wool under such conditions; not because the detergent is destroyed in acid, but because it is adsorbed from acid solution by the fiber. This explains why the early suggestion of washing wool with fatty alcohol sulfates in acid solution is not feasible.

Acid washing is possible with cationic soaps however, since no adsorption occurs under those conditions. The conception of wool washing in an acid medium is a highly important advance, since it does away with the fear of lime and magnesium soaps. Wool may be washed in a mildly acid solution with similar efficiency to that obtained with anionic soaps in the familiar soap-and-soda baths. A bath of 50,000 parts of water containing 50 parts of stearyl pyridinium bromide (cationic), is made definitely acid to litmus by adding dilute hydrochloric acid. One thousand parts of raw wool may then be introduced into the foaming solution at 40-50° C., and cleaned by gentle movement for 15-30 minutes. Wool is cleaned in this way from organic and inorganic impurities and is in an excellent state for dyeing. J. Warwicke. *Textile Colorist* **61,** 315-7, 378-80 (1939).

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Fatty Acid Method

Saturated or partly saturated fatty acids are obtained from unsaturated animal or vegetable oils by hardening the oils or fats in a known manner by catalytic hydrogenation under high pressure, and passing the hardened products directly, without intermediate separation of catalyst, to an autoclave in which they are saponified, preferably by reaction with water. Metallges. A.-G. German Patent No. 672,225.

Products and Processes

Dry-cleaning Soaps

Dry-cleaning soaps prepared with triethanolamine are made by mixing a solution of oleic acid in a hydrocarbon solvent or chlorinated hydrocarbon with an aqueous solution of triethanolamine and caustic potash. Each of the solutions is brought to about 60°C. when the aqueous solution is slowly stirred into the hydrocarbon. Stirring is continued for about 30 minutes.

		Kg.
1.	Solution A. Oleic acid	52.0
	Octyl alcohol	10.5
	Turpentine substitute	16.7
	Solution B: Caustic potash	4.9
	Water	9.3
	Triethanolamine	6.6
2.	Solution A: Oleic acid	53.0
	Butylcellosolve	13.5
	Turpentine substitute	12.5
	Solution B. Caustic potash	4
	Water	6.5
	Triethanolamine	10.5

Excess fatty acid is present, the soap in the first formula being saponified to the extent of 72 per cent, in the second formula 75 per cent. The soaps are completely soluble in dry-cleaning solvents. *La Revue des Produits Chimiques* **42,** 261 (1939).

Cold-process Soap

The official U.S.P. soap preparations made by cold saponification all possessed a better appearance than those prepared by the official methods. Soybean oil or corn oil form excellent soft soaps without objectionable odor and low in price. The use of heat in the saponification process tends to produce darker products. A saponaceous solution of cresol may be prepared without the application of heat to give a light-colored preparation. David W. O'Day and James W. Jones. *J. Am. Pharm. Assoc.* **28,** 227-32 (1939).

Combination Detergents

Products containing both anions and cations which are surface-active have been abtained, such as lauryl pyridinium laurate and lauryl pyridinium lauryl sulfate. Such substances have substantive properties and are effective softening agents, but not scouring agents. Theoretically such compounds combining a quaternary ammonium compound with an aliphatic group should be most active, but they do not seem to be commercially important. The cost of such complicated bodies may have something to do with this. F. G. Brown. *Textile Colorist* **61,** 306-9. 348 (1939).

Detergent from Mineral Oil

A detergent to be used in aqueous solution, which is free from color and odor both in solution and in dry form, is prepared by the fractional distillation and solvent extraction of mineral oil so as to produce a material boiling at 210-250° C. at 5 mm. pressure. The extraction is made with a preferential solvent which tends to dissolve certain constituents of the oil and not others, those dissolved being of an unsaturated nature. The material is next dissolved in liquid sulfur dioxide and treated with a sulfonating agent. The product is finally washed with a hydrocarbon solvent. Colgate-Palmolive-Peet Co. Canadian Patent No. 382,156.

Tetrasodium Pyrophosphate

Tetrasodium pyrophosphate is produced in crystalline form with a content of about 60 per cent of anhydrous salt, $Na_4P_2O_7$, corresponding to 31.8 per cent of P_2O_5. The solubility of pyrophosphate is 5.5 grams per 100 grams of water at 20° C., 56.7 grams per 100 grams of water at 80° C., the point of maximum solubility, and 43.5 grams per 100 grams of water at 100° C. On boiling, solutions of pyrophosphate change very slowly to orthophosphate.

The mild alkalinity of tetrasodium pyrophosphate makes it suitable for incorporation in soap powders. In dilute solution it has a pH of approximately 10. It is a useful soap builder and may be used with safety on silks and woolens. The pyrophosphate forms complex ions with many metals, preventing precipitation of insoluble compounds when water is contaminated with iron, zinc, copper, etc. The pyrophosphate is less efficient than the metaphosphate in preventing the formation of insoluble calcium compounds, although in general, the converse hold for metals other than calcium.

Tetrasodium pyrophosphate possesses superior emulsifying power for the removal of grease and oil, as in dish washing. It also makes a good paint cleaner. It can be used alone or mixed with other alkalies for degreasing metals soiled with mineral oils. Some applications are found in admixture with sulfated fatty alcohols, particularly as an assistant in textile operations. C. W. Todd. *Chem. Trade J. & Chem. Engineer* **104,** 513-4 (1939).

Liquid Soap

A good lathering liquid soap for use in hospitals, hotels, restaurants, etc., is usually a 10-15 per cent potash soap solution and can be made from the following:

	Parts
Coconut- or palm-kernel oil fatty acids	12
Peanut-, soybean oil or olein fatty acids	3
Caustic potash, 50°Be	9
Distilled water	76
Potash or potassium chloride	1

The potash or potassium chloride is dissolved in the water. Saponification of the fatty acids is carried out by the semi boiled process. *Seifensieder-Ztg.* **66,** 331 (1939).

Oil Refining Process

Oils, fats or waxes are refined by treatment with organic peroxide at a temperature low enough so that the peroxide does not decompose, about 50-60° C., in the presence of a precipitant for mucilaginous material. A sufficient amount of peroxide is used to insure its presence in the end product. V. R. Kokatnur and O. S. Plantinga. Canadian Patent No. 382,087.

Hard-water Soaps

Ortho- or polyphosphates of alkali metals are mixed with sodium soaps derived from polyethylenic fatty acids such as linoleic acid, or from mixtures of such acids with monoethylenic fatty acids such as oleic acid, with or without stearic, palmitic, lauric or myristic acid. The soap preparations obtained may be dissolved in hard water without causing inconvenient precipitation of insoluble soaps and without formation of scum. Lever Bros. & Unilver Ltd. French Patent No. 835.274.

Wall-paper Cleaner

A paste cleaner for removing soil and spots from wall paper is prepared by warming on the water bath a saturated solution of common salt and adding starch in the proportion of 30 to 40 parts of starch to 60-75 parts of salt solution. This is kneaded into a plastic mass and a few per cent of heavy benzine added. The latter is to remove grease spots. *Seifensieder-Ztg.* **66,** 312 (1939).

Zein in Soap

Zein, a protein derived from corn, can be used in small proportions, like casein, as an addition to soap. It helps increase lathering power and gives the soap more body, a useful property in cheap soaps. To incorporate zein in soap, make a 25 per cent alcoholic solution of the protein containing 5 per cent of glycerine. Add this very slowly to the soap during the crutching process. Zein is precipitated in water, but by this method the gelatinous precipitate is rapidly dispersed as it is formed and partially absorbed by the bulk of the soap. Two per cent is all that is necessary to produce a stabilizing effect on lather. Paul I. Smith. *Am. Perfumer* **38,** No. 5, 37-8 (1939).

Detergent Agents

Aliphatic substances containing an alcoholic hydroxyl group are sulfonated by bringing together continuously flowing streams of the aliphatic substance and the sulfonating agent in the full proportions required for the reaction, allowing the reaction to proceed without restraining the resulting rise of temperature, and arresting the reaction by neutralization or rapid cooling, or both, to prevent side reactions. Diluents such as low-boiling hydrocarbons, trichloroethylene, ethylene dichloride, carbon tetrachloride, etc., may be used in the sulfonation. Coconut-oil alcohols, secondary alcohols obtained by the oxidation of paraffin, vegetable fats, fatty oils and waxes may be thus sulfonated. Victor Mills (to the Procter & Gamble Co.). British Patent No. 499.373.

Olive Foots Soaps

Bleaching olive oil foots,—and olive oil foots soaps,—for the manufacture of white and cream soaps,—an interesting discussion of methods and materials used in Spain,—in the next issue of SOAP & SANITARY CHEMICALS by Dr. Ernest Stossel, recently of Barcelona.

Granular Cleaner

A powdered or friable granular cleansing preparation for addition to water to be used for toilet purposes consists of a preponderant quantity of starch, a water-softening agent such as sodium sesquicarbonate, and a sulfonated foaming agent such as the sulfonate of lauryl alcohol and sulfonates of fatty alcohols with $C_{10}H_x$ groups. Walter Acton. British Patent No. 498.743.

Naphthenic Wetting Agent

The naphthenic acids found in petroleum can be combined with primary aromatic amines such as aniline by heating for 8-10 hours and distilling off the water as it is formed. The naphthenanilides are saponified much less readily than ordinary anilides such as acetanilide, and have but weakly basic properties. They are easily sulfonated by fuming sulfuric acid. Sulfonated naphthenanilides are good wetting agents for textiles, aiding penetration and evenness in dyeing. They can be used in bleaching and dyeing felt and leather. Henri Blum. Bull. soc. ind. Mulhouse **105,** 116-18 (1939); through Chem. Abs.

Casein Soap

Casein can be added to toilet soap by preparing a paste in the following way: 20 parts of casein are moistened with the same amount of water. Add to this with stirring a hot solution of 1 part of borax in 40 parts of water. The mass is stirred until smooth. Four parts of 36-38° sodium silicate are added which thickens the mixture to a paste. This is suitable for addition to toilet soap in the crutching machine. From 5 to 10 per cent may be used, based on the weight of soap. Only that amount of paste should be prepared at a time which can be used in soap on the same day. *Seifensieder-Ztg.* **66,** 391 (1939).

Fish Oil Fatty Acids

Fatty acids of fish oil when distilled under reduced pressure gave a fraction with a 65 per cent yield. The fraction was treated with sulfuric acid and distilled and gave an odorless fatty acid. The soap made from this appeared to be inferior to other soap. The first fraction was next distilled under reduced pressure, this time with a 25 per cent yield. The last material was hydrogenated and soap made from it, which had properties similar to those of other soap. G. Matumoto. S. Matuo and K. Takahasi. *Repts. Imp. Ind. Research Inst.*, Osaka, Japan **19,** No. 10, 43 pp. (1939); through Chem. Abs.

Blueing Compound

A blueing and water-softening detergent for washing clothes consists of crystals of the agent, such as trisodium phosphate or soda ash, coated with a water-soluble blue dye which is a salt of a sulfonic acid of a substituted alkylaminotriphenylcarbinol. A suitable dye is Alphazurine A or Alphazurine B. Albert A. Fowler and Russell M. Otis. British Patent No. 488.647.

Low Grade Soap Fats

HOUSEHOLD soaps are made usually from rather inferior-quality fats, but toilet soaps can also be made from second-rate fats by mixing these with a suitable proportion of higher grade fats. Low grade waste fats require special treatment before use. They should be treated in a lead-lined kettle, as they are subjected several times to chemical bleaching. The container should be equipped with coils for heating with indirect steam.

From 100 to 150 kg. of strong brine solution are put into the kettle and warmed with indirect steam. The fat is added to this slowly. It should not be allowed to get too hot, but should be heated only slightly above its melting point. The mixture is well stirred and allowed to stand overnight. The next morning the brine liquor is drawn off and the scum on the surface also removed. The fat is washed well with warm water. The color is next brightened by a bleach treatment. Since neutral fat bleaches better than fatty acids, it is advisable to treat the fat first with strong lye solution. The latter reacts at once with free fatty acids, when an improvement in odor occurs. After the lye treatment, excess lye is separated, as well as soap which has formed.

As bleach at this stage, hydrogen peroxide is recommended of 30 per cent concentration. The amount required must be determined by small laboratory trials. No fixed scheme can be given as too many factors play a role. The hydrogen peroxide is stirred into the warm fat, keeping the temperature as low as possible, preferably in the neighborhood of 60° C. Some impurities may precipitate out during the process and should be separated before the fat is used. The fat can then be pumped to the soap kettle.

Although this fat could be used alone for making curd soap, it is not advisable. For household soap it is well to mix it with 50 per cent of other fats, and for toilet soap with at least 70 per cent of other fats.

Part of the alkali is put into the soap kettle, the fat is added, and then the balance of alkali. The mixture is boiled for two hours and then brought to the correct alkalinity by the addition of coconut oil. Water is added until the soap has a glassy appearance, and steam admitted with great care. The same tests are made as for other soaps. A phenolphthalein test should show a pale pink color. Lumps in the soap at this time are not a serious matter as they will dissolve quickly and will be gone the following day. The soap is allowed to stand overnight in this glassy condition.

The next day it is salted out twice. If strong stirring is used, fine dry salt free from lumps can be added directly without danger of the salt being held in the soap. Otherwise a strong brine solution is used. This is added before the steam valve is opened. It is continued until a clear underlayer appears. The fatty acid content of the soap is about 50 per cent. The underlayer is withdrawn after a half hour, or with very large kettles, after an hour. The second salting out operation follows immediately. Washing is done with a weak salt solution. A bleaching operation follows and the process continued as in making any other soap. Bleaching may be repeated if necessary. A light soapstock results suitable for making colored soap but probably not white soap. Heinz Zilske. *Allgeneine Oel- und Fett-Ztg.* **36,** 189-93 (1939).

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Extraction Process

Fatty oils etc. are extracted with solvents by dividing the powdered raw materials containing them into a series of superposed zones in an extraction column by means of transverse flat or dished partitions mounted on a central rotatable axis. Each partition is provided with an aperture out of vertical registration with the apertures in adjacent disks so that the raw material passes downward in a spiral path around the axis. The main body of the material is held against rotation by a fixed vertical baffle in each compartment that acts as a dam over which freshly exposed material continuously flows. Raw material is fed in at the top of the column and a solvent, e.g., gasoline, is pumped in at the bottom. Extractol Process Ltd. British Patent No. 484,117.

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Isoacids in Fat Hardening

The formation of solid unsaturated fatty acids whose lead salts are insoluble in alcohol serves for the detection of hardened fats. These may be formed (1) because of repeated selective hydration of unsaturated acids, (2) by the migration of the double bond, or (3) by isomerization as in the formation of elaidic acid from oleic acid. The possible effects are dependent on temperature. K. H. Bauer and W. Herzog. *Fette und Seifen* **46,** 203-6 (1939).

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Fat Extraction

Vegetable or animal waste matter such as that from slaughter houses is mixed with concentrated aqueous ammonia with the addition of primary ammonium phosphate, heated under pressure with steam and beaten up to form an albuminous mud in which the fat is emulsified. The fats are then extracted in separators or equivalent apparatus. Hans Haneschka and Joseph Vermes. French Patent No. 829,379.

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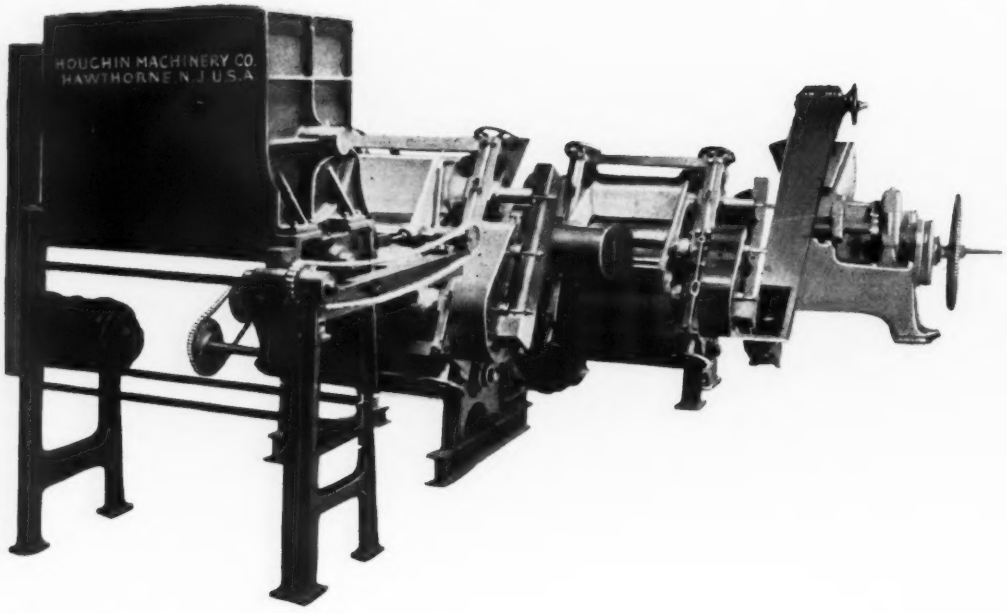
Hydrogenated Oils

Soybean oil and various fish oils are hydrogenated to produce edible oils of high resistance to rancidity. The reaction is carried out preferably between 147 and 166° C., while agitating to produce a uniform rate of reaction. The hydrogenated oil may be further hydrogenated to a semisolid. Intermetal Corp. French Patent No. 830,778.

Complete Unit for Milling and Plodding
TOILET SOAP



Capacity 1,000 lbs. per hour (once through).
Unit consists of:

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One (1) Three-Roll Chilled Iron Water Cooled Mill.
One (1) 10"-Preliminary Plodder fitted with Screen.
One (1) Three-Roll Chilled Iron Water Cooled Mill.
One (1) 10"-Preliminary Plodder fitted with Screen.
One (1) Conveying Screw with motor.
One (1) 10"-Finishing Plodder fitted with Electric Heater and Forming Plate.
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Unit operated by (2) 15-H.P.—(1) 10-H.P.—(1) 5-H.P.—(1) ½-H.P. Motors. Roller Chain Drives. Complete Weight 24,000-lbs. Floor Space 15-ft. x 21-ft.

We have recently installed a unit for making 5,000-lbs. of Toilet Soap per hour, taking two bars at a time from the Plodder and Automatic Bar and Cake Cutter.

These units are only recommended for long runs of Soap. We will be pleased to give further particulars upon request.

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New Equipment

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

597—Hydrogenation Process

Southwestern Engineering Co., Los Angeles, has recently published a 26-page brochure describing the T.R.W. continuous hydrogenation process. Among those things described in full are the catalyst, hydrogenation plant, process of hydrogenation, and advantages of the process. Also, applications of the T.R.W. process to the chemical industry, uses of hydrogenated products and a comparison of this process of hydrogenation with the Batch Powder Processes. A two-page layout, or flow sheet, illustrates the operation of the plant from beginning to end. The back of the book is devoted to operating costs of the T.R.W. process using varying catalyst blocks and at varying temperatures. Several pages are devoted to a comparison of these costs with those of known Batch Process Costs. Eastern representative for this process is Alan Porter Lee, New York. Copies of the brochure are available.

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598—New Carboy Pourer

Lewis-Shepard Sales Corp., Watertown, Mass., has announced the development of a new type of safety carboy pourer. Light in weight and rigidly built, it is said that it may be easily handled by one man. With the carboy resting on its base, the pourer is placed over the top and clamped securely by means of a threaded handle just below the shoulder. A pull on the handle brings the carboy over into pouring position.

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599—New Vibrating Sifter

Read Machinery Co., York, Pa., has developed a new vibrating screen sifter for granular or pulverized material. A vibrating screen extending the full length and width of the sifter is operated from a standard motor with a guarded Vee-Belt drive to the vibrating unit. The new sifter, available in varying sizes and capacities, is said to have no exposed moving parts and no sliding surfaces.

—♦—

600—New "Lightnin" Mixer

Mixing Equipment Co., Rochester, N. Y., is in production on a new redesigned "Lightnin" side-entering vee-belt mixer. By changing from castings to fabricating, the new unit is said to be stronger and lighter in weight at a saving in price. Other features claimed are simplified construction which permits greater ease in dismounting motor and belts, cartridge type rear bearings, and ease in keeping the unit cleaned.

—♦—

601—Fritzsche Price-List

Fritzsche Bros., Inc., essential oils, New York, have just issued a new price-list covering their essential oils, aromatic chemicals, compounded aromatic bases, etc. Copies are available.

—♦—

602—Monsanto Magazine

Monsanto Chemical Co., St. Louis, in its July issue of *Monsanto Magazine*, featured a story on the "Men Over 40" argument, in which age brackets of Monsanto employees were given. Copies of the magazine are available.

—♦—

603—D. & O. Price List

Dodge & Olcott Co., essential oils and aromatic chemicals, New York, has issued a new wholesale price catalog.

—♦—

604—Foote Mineral Booklet

Foote Mineral Co., Philadelphia, has recently issued its semi-annual booklet "Foote-Prints" on chemicals, metals, alloys and ores. Forty-eight pages are devoted to zircon, ilmenite and monazite mining in India, quantitative tests on evaporation, spattering and slag reactions of coated electrodes, a periodic chart of the elements, etc.

—♦—

605—Profit Packages

The Hinde & Dauch Paper Co., Sandusky, O., has just issued a book "Profit Packages." It contains twelve different "profit packages," each illustrated and described. Copies are available at the company's offices at Sandusky.

—♦—

606—Dreyer-Log

The July issue of *Dreyer-Log*, house organ of P. R. Dreyer Inc., New York, contains the first of a series of articles on essential oils native to this country. Fred C. Theile is the author of the articles. An interesting two-page chart lists various essential oils, their odor, color, uses and remarks.

—♦—

607—Internat'l Nickel Booklet

International Nickel Co., New York, has issued a new booklet which emphasizes the importance of small items of equipment, such as springs, bolts, electrical contact points, etc. It contains sixteen pages with illustrations and charts, and presents technical and mechanical data on nickel, Monel, Inconel, "Z" Nickel, and other products. Separate sections are devoted to discussion of problems such as resistance to heat, vibration, corrosion and wear. Copies are available at the company's New York office.

—♦—

Wool Scouring

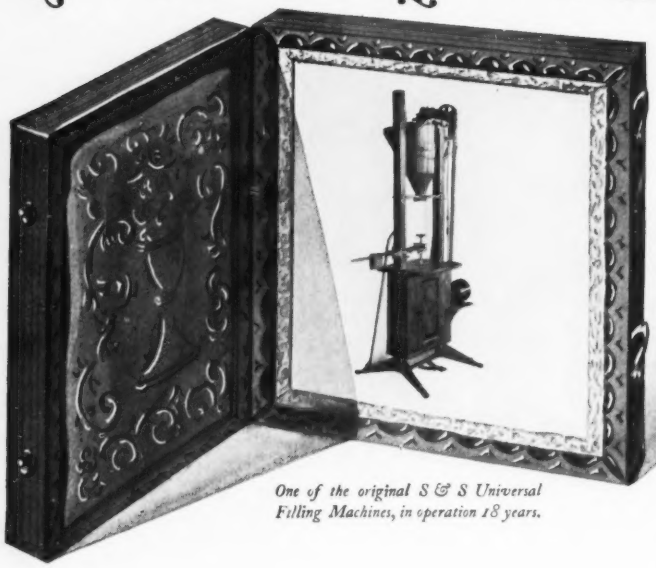
Wool is scoured or cleaned by treatment in a scouring liquid containing pyridine or a homologue, ammonia, and a substance to emulsify the released fatty matter in the scouring liquid. Edric Laboratories Proprietary Ltd. Canadian Patent No. 381,547.

—♦—

Improving Soap

The detergent power of soap is improved by incorporating a mixture of spirit of turpentine and of perfume, the soap itself being ordinary hard soap. J. E. Vuylsteke. Belgian Patent No. 429,376.

naphot$ From the Family Album



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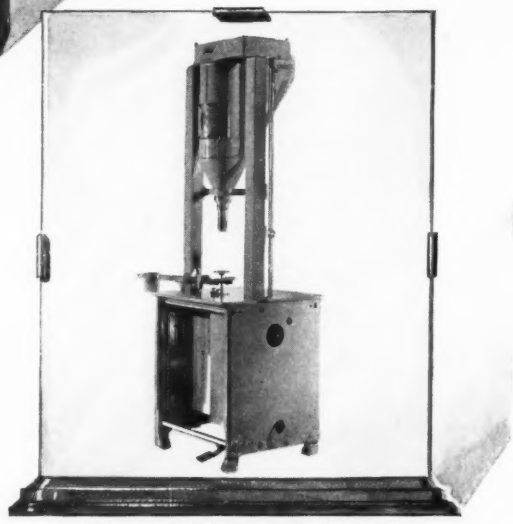

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No. 2,160,834, Fungicidal Soap, Patented June 6, 1939, by Sewell M. Corbett, Fort Bragg, North Carolina. A prophylactic for the treatment of infectious diseases produced by the fungus group, consisting of a cake of soap prepared from a soap formula to which has been added sodium thiosulphate and a relatively small amount of copper sulphate.

No. 2,162,023, Detergent Composition, Patented June 13, 1939, by Samuel J. Miller, Boris Sway, and Edward P. Breckel, Cincinnati, Ohio, assignors to The Du Bois Soap Company, Cincinnati. A free flowing granular detergent composition, comprising, water soluble fatty acid soap, cresylic acid, diethylene glycol, and an alkali selected from the group consisting of trisodium phosphate, sodium metasilicate, soda ash and sodium hydroxide, and an absorbent earth, the intercomponent ratio between the diethylene glycol and cresylic acid and absorbent earth of the composition extending from substantially one part to one part to five parts, respectively, to one part to four parts to twenty parts, respectively.

No. 2,162,255, Soap, Patented June 13, 1939, by Robert F. Heald, Nutley, N. J., assignor to Colgate-Palmolive-Peet Company, Jersey City, N. J. The method of stabilizing coloring materials when present in soap which comprises incorporating in the soap a small amount of a tin compound.

No. 2,162,904, Spray Oil Composition, Patented June 20, 1939, by John Raymond Allison, Whittier, Calif., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif. A spray oil composition resulting from combining a mineral spray oil containing a fatty acid emulsifier compound at least partly soluble in the oil and also at least partly soluble in water and a small amount of free fatty acid with a spreader and buffer in the form of a water soluble protein compound and a small excess of free alkali.

No. 2,163,228, Soap Package, Patented June 20, 1939, by Joseph H. Jorling, Cincinnati, Ohio, assignor to The McDonald Printing Company, Norwood, Ohio. A package comprising a bar of soap sealed in a sheet of wrapping material provided on one side with a heat-seal coating and and on the other side with a moisture,—acid,—and alkali-resistant coating of vinyl resin adapted to counteract the emission of characteristic constituents of the soap for reducing wastage and deterioration thereof.

No. 2,163,560, Parasiticidal Compositions, Patented June 20, 1939, by William B. Parker, Placerville, Calif., assignor to California Spray-Chemical Corporation, Berkeley, Calif. A horticultural parasiticide comprising a mineral oil having dispersed therein an oil jelling agent in quantity sufficient to produce incipient jellation.

No. 2,164,012, Treatment of Nonmineral Fatty Matter Raffinates, Patented June 27, 1939, by Walter J. Hund, Oakland, and Ludwig Rosenstein, San Francisco, Calif., assignors to Shell Development Company, San Francisco, Calif. In a process for the refining of fatty matters with a nitrogen-containing alkaline extractant, the steps of first water-washing the raffinate obtained by the main extraction until substantially no free extractant is included therein and subsequently washing the raffinate with a minor volume of a dilute aqueous solution of an acid-acting agent at least stoichiometrically equivalent to the soaps present in the treated raffinate whereby the extractant combined as soaps is liberated and simultaneously substantially removed from the fatty matter.

No. 2,164,274, Distillation of Glycerin, Patented June 27, 1939, by Martin Hill Ittner, Jersey City, N. J., assignor to Colgate-Palmolive-Peet Company, Jersey City, N. J. The method of promoting the distillation of glycerin with the aid of open jet steam discharged into the body of glycerin undergoing distillation which comprises bringing the hot glycerin vapors from such distillation into indirect contact with water free from objectionable volatile impurities to effect simultaneous condensation of glycerin and generation of steam from the water, and supplying steam so produced, free from objectionable volatile impurities, as the open jet steam used to promote the distillation of the glycerin.

No. 2,164,275, Distillation of Glycerin, Patented June 27, 1939, by Martin Hill Ittner, Jersey City, N. J., assignor to Colgate-Palmolive-Peet Company, Jersey City, N. J. In an apparatus for distilling glycerin, a still having closed steam coils therein to furnish heat for the volatilization of the glycerin during distillation, a boiler-condenser connected to the still for receiving and condensing glycerin volatilized in the still and for the generation of steam from boiling water by utilization of the heat of condensation from the condensing glycerin for converting the boiling water into steam, and means for drawing off condensed water from the closed steam coils and supplying the same to the boiler-condenser for converting into steam, and means for collecting the condensed glycerin.

No. 2,164,276, Distillation of Glycerin, Patented June 27, 1939, by Martin Hill Ittner, Jersey City, N. J., assignor to Colgate-Palmolive-Peet Company, Jersey City, N. J. In an apparatus for the distillation of high boiling liquids with the aid of open jet steam under diminished pressure, a condenser-concentrator for the condensation and concentration of high boiling liquids with the aid of a cooling liquid, the condenser-concentrator having an inlet for the vapors of the high boiling liquid and steam, etc., at the bottom and an outlet for uncondensed steam, etc., at the top, the condenser-concentrator having means for supplying a cooling liquid in its upper part and closed means with horizontally extending surfaces for causing the same to flow downwardly in a direction generally counter-current to the upwardly flowing vapors, and in indirect contact with the vapors and condensed liquid, means for removing the cooling liquid in the lower part of the apparatus and means for causing condensed liquid to flow downwardly in indirect contact with the cooling liquid and in direct contact with the vapors with resulting gradual heating of the cooling liquid by heat given up by condensation of aqueous high boiling liquid solutions, and concentration of the condensed liquid progressing downwardly thru the apparatus, and heating means being provided in the lower portion of the condenser-concentrator to aid in the concentration of the condensed and downwardly flowing liquid.

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Soap Solutions

Systematic examination of soap solutions under a microscope reveals for each soap three different crystalline constituents. From the most dilute solutions crystals of free fatty acid separate, from solutions of intermediate concentration crystals of acid soap, and from more concentrated solutions crystals of neutral soap separate. Identity of the substances was established by determination of melting points and by analysis.

On warming soap solutions containing suspended crystals of free fatty acids, the acids melt at their usual melting points. Crystals of acid soaps, on the other hand, undergo transformation well below the melting point. Acid laurate, myristate and palmitate change directly to a liquid-crystalline substance, whereas acid stearate breaks up into two substances. At high dilution the liquid-crystalline acid soaps, on further heating of the solution, decompose with formation of isotropic drops of oil consisting of fatty acid. The decomposition is reversible.

In the "first region of turbidity" of soap solutions the turbidity arises from crystalline or molten free acids, whereas the "second region of turbidity" comes from crystalline acid soaps or their liquid-crystalline transformation products. The location of the two regions of turbidity as determined microscopically agrees with that previously determined nephelometrically and with indirect determination of the limiting concentration for separation of acid soap. There is a definite saturation concentration for neutral soap in the region between the transformation point of acid soap and the melting point of the fatty acid.

The "association colloid" in equilibrium with the molecularly dispersed constituents of soap solutions is likewise considered in true solution. That is not true, however, of the "supersaturation colloid" that appears incidentally in soap solutions above the saturation concentration. As a result of separation of difficultly soluble hydrolysis products the saturation limit can be shifted toward higher concentration, hence the amount of soap substance in solution cannot always be determined from the saturation limit. Temperature concentration diagrams showing the liquid and solid phases are given for solutions of soduim laurate, sodium myristate, sodium palmitate and sodium stearate. P. Ekwall. *Kolloid-Z.* **85,** 16-24.

Synthetic Fatty Acids

According to latest report of the British Fuel Research Board, considerable progress has been made in England in the production of useful fatty acids suitable for the manufacture of soap, from a by-product of wax in the synthesis of a lubricating oil from water gas enriched with hydrogen. One possible method of utilizing this material commercially is to oxidize the waxes, which probably consist of straight chain hydrocarbons, in order to produce straight chain acids. These acids, so obtained in England, have an acid value of about 200 and give satisfactory soaps with good, persistent lathering properties, it is reported.

Distilled Fatty Acids

Fatty acids which have been obtained by the Twitchell fat splitting process and subsequent distillation are not suitable for use in making soap because they greatly diminish the stability of the soap on storage. Such fatty acids contain hydroxy acids formed during the fat splitting process and these are changed to isoöleic acids during distillation. The presence of these acids in the soap make it less stable. F. Wittka. *Seifensieder-Ztg.* **66,** 187 (1939).

Purifying Fats

Fats, waxes and other substances immiscible with water are purified in the liquid state by heating them to a temperature of 200-400°C. and injecting cold or hot water. Impurities are removed by the steam which is produced. Industrie chimique de Paris. French Patent No. 832-170.

Purifying Sulfonated Agents

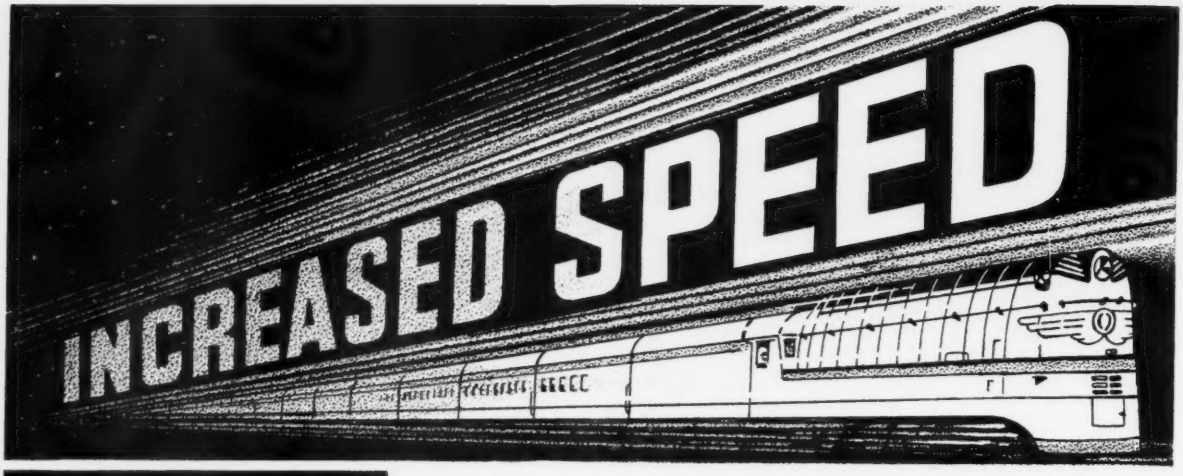
Impure sulfonated products derived from alcohols or olefins containing 10-25 carbon atoms, or mixtures thereof, are freed from undesired constituents by extracting the aqueous solution of the products, after addition of a water-soluble inorganic salt, with an ether having 6 or fewer carbon atoms in the molecule and boiling below 100°C. The extraction may be effected before or after neutralization of the sulfonated products. The cleansing properties of the products are improved by the purification. I. G. Farbenindustrie A.-G. and Standard Oil Development Co. British Patent No. 494,616.

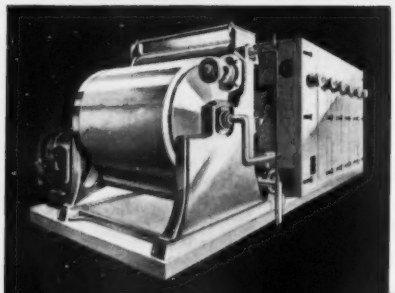
Nickel-copper Catalysts

Hydrogenation tests of nickel-copper catalysts were made with soybean oil. A series of catalysts were made in which the ratio of copper to nickel was varied. All of these, including the best one containing nickel to copper in a 60:40 ratio, were inferior to nickel alone on kieselguhr, while copper alone on kieselguhr had only a very weak catalytic action. Copper is to be regarded more as an efficient carrier for the nickel than as a true hydrogenation catalyst. The carrier-free nickel-copper (1:1) catalyst showed up as equally effective as highly active nickel on kieselguhr and nickel-chromium catalysts, provided the comparison was made on the basis of equal amounts of nickel. Catalyst odor was observed in the soybean oil hydrogenated in the above experiments, and also in whale oil hydrogenated with the aid of copper-nickel, copper-chromium and copper on kieselguhr catalysts. W. Normann. *Fette und Seifen* **45,** 664-9.

Odorless Tall Oil

Tall oil is deodorized by heating *in vacuo* to 150°C., leading superheated steam through and removing the gases which are given off and the impurities which collect at the bottom. Bergvik och Ala Nya Aktiebolag. Swedish Patent No. 92,743; through Chem. Abs.





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Liquid Handling

(*From Page* 27)

are most suitable for filling tin cans of rectangular shape, as the use of the vacuum principle filler has a tendency to decrease the capacity of the container by collapsing the walls to a certain degree. Production of twenty-five to forty containers per minute can be attained on the accurate measure fillers.

Vacuum fillers which had such a humble beginning and were of limited application have come into their rightful place largely through the impetus given their manufacturers to develop and improve them by the food and particularly the liquor industry. Adaptations have been designed to handle foamy liquids and also containers with constricted necks for dispensing liquids formerly utilizing sprinkler tops.

Currently we are operating a large battery of such fillers of three different types and having six, ten, sixteen, eighteen, twenty-four and thirty-two filling stems and have standardized on this type. Gallons and half gallons are handled on the type where the containers remain stationary. By means of flexible connections to both the source of liquid supply and vacuum and a hand lever, the filling stems are lowered into the necks and withdrawn after filling. Containers are handled in gangs. The second type handles the containers in gangs also but the table raises three lines of containers on to three rows of fixed stems. The first row cleans the ware, eliminating the need for a cleaner, the second line makes the major fill and the third the final "dribble" fill.

The third type is the rotary which handles the containers singly and quietly, lifting them into position and dropping them to a discharge conveyor after filling. Speeds up to one hundred-twenty containers per minute on as large as quarts are attainable.

With due consideration given the above, an intelligent choice of the type of filling equipment for any products should be arrived at. The type being chosen, the other requirements include: 1. The machine should be constructed of such materials as will withstand any chemical action. Suggestions for determining this conclusively were offered earlier. 2. It must have such capacity in containers per minute as will tie in properly with the other equipment in the assembly line. 3. If it is to be used on various sizes, it should be quickly and easily adjustable to take the sizes it is intended to fill. 4. If more than one product is to be filled on it, it should be accessible and easy to clean thoroughly so as not to tie up production unduly between runs.

As with soap manufacture, so long as the liquid is in bulk the labor involved in handling both before and after mixing or other manufacturing operations is relatively small. As soon as the unit container comes into the picture, however, the labor involved becomes appreciable. The operations subsequent to manufacture should be studied with a view to efficient handling.

From the time the empty containers arrive on the scene, until they are cleaned, filled, closed, labeled and repacked in shipping cartons, in fact, until they are stowed in shipping conveyances, an efficient conveying system may well be given mature thought. The whole conveyor system should be tailor-made to fit each job when it will repay the time and money put in it many times over and eliminate most of the drudgery from every packaging operation.

Fat Hydrogenation

An oil, fat or fatty acid to be hardened is mixed with a hydrogenation catalyst and treated with hydrogen at a high temperature, if necessary under pressure, in a pipe divided by elbows or curves into different sections, the oil being introduced without interruption at the upper end of the reaction tube and the finished product being evacuated at the lower end. The different sections may be heated separately to different temperatures. Henkle & Cie. G.m.b.H. French Patent No. 828,883.

Oil Lemongrass

(*From Page* 31)

pends greatly upon season and condition of plant material. It is relatively higher during the dry season.

One hectare of lemongrass yields from 50 to 80 kilos of oil, the yield depending, of course, upon the age of the plantation. (This represents a yield of approximately 44 to 71 pounds per acre.)

Chemistry of Lemongrass Oil

IT IS not the purpose of this paper to go into detail regarding the chemical composition of oil of lemongrass; it has been fully described in such classical text books as *Die Atherischen Ole* by Gildemeister and Hoffmann. Y. R. Naves[8] described the chemical composition of West Indian lemongrass oil.

Suffice to point out here that the lower solubility of the "West Indian" lemongrass oil is caused by the presence of a greater amount of low-boiling terpenes, especially myrcene, which easily becomes insoluble by polymerization and dien-condensation. The content of citral of East Indian and "West Indian" oils is about the same, but it seems that the West Indian oil, aside from citral, contains other aldehydes which are difficult to separate when isolating citral. Besides, the "West Indian" oil is characterized by a more pronounced methyl heptenone note. The citral content of oil of lemongrass is determined either by the sulfite or bisulfite method, the latter giving higher figures because it also determines other aldehydes and ketones. Therefore, every contract should designate clearly the method by which the aldehyde content has been determined.

[8] *Les Parfums de France* 9 (1931), 60.

Fat is extracted from meats, bones, slaughter-house offal, fish, seeds, etc. by heating the material in a closed steam-jacketed receptacle and simultaneously subjecting it to a steam pressure and centrifugal action. A suitable centrifugal machine is described. Jean Schmidt. British Patent No. 486,662.

Fatty Acids for Soap

(*From Page* 23)

Therefore it is very important to use as little salt as possible as a fatty acid soap is by itself shorter on account of the entire absence of glycerine. This is more important still if the soap is to be made into toilet soap, as in this case splitting and cracking of the milled soap bar may arise. A high amount of electrolyte may also cause a white coating on the surface of the soap bar both with ordinary household soap and toilet soap. It is necessary therefore to use a minimum only of salt.

The greater shortness of fatty acid soap can be compensated especially with toilet soap by adding 1-3 per cent glycol or carbitol or by superfatting the soap especially with lanolin products, but petrolatum and some other ingredients are suitable as well.

In Germany, methyl cellulose (Tylose) is used as filling agent especially for household soaps, but sometimes for toilet soaps too. Such addition has the advantage of diminishing the shortness of the soap. (In this connection it may be mentioned, that in Germany Tylose is used as a substitute for glycerine.) An example may be quoted here:

Tylose (methyl cellulose) is a type of synthetic mucilage. A typical formula for Tylose filling solution is given.[8]

	Parts
Tylose solution, 3 per cent	68
Caustic potash 40° Be	3
Sugar	3
Water	11
Potassium chloride solution, 20° Be	15

The quantities are only approximate, as they would vary with the curd soap composition.

Generally speaking an addition of 0.75 per cent methyl cellulose based upon the soap weight, is adequate. It is said to increase lather and reduce alkalinity.

Additions of casein, fatty alcohols, turkey red oil, etc., are of importance for soaps produced from fatty acids particularly to overcome their shortness, but it would be beyond the scope of this article to deal with superfatting in detail.

Recently an article was published by F. Wittka dealing with the quality of soap from distilled fatty acids.[9] Wittka concludes that distilled fatty acids differ in their composition from the composition of fatty acids within the neutral fats, from which they are derived. These differences date from the process of distillation. This fact may cause a reduced stability of fatty acid soaps. Moreover Wittka emphasizes the importance of the origin of iso-oleic which may also lead to lessened soap stability. The lesser stability of soaps made from fatty acids manufactured by the Twitchell process is explained by the pro-oxidative qualities of the splitter which is used in this process, and which during the process remains with the fatty acids. Wittka definitely concludes that soaps manufactured from fatty acids distilled from the acid fat are far less stable than the soaps manufactured directly from whole fat stocks. To explain this phenomenon Wittka points out, that the natural fats and oils contain in addition to their chief components some secondary ingredients as taste and odor substances, alcohols, sterols, lipoids in small quantities, mostly less than 1 per cent. These secondary ingredients are of little importance when the whole fat is used as the small amount is insufficient to cause deterioration in the soap.

It may be added, that these secondary ingredients mentioned by Wittka may also have to some extent an anti-rancidity effect, as was shown by Hilditch. This applies only to undecomposed substances. It means that some secondary ingredients not only do not impair the quality of the soap, but on the contrary may improve the stability of the soap against rancidity, for instance the sterols. This is, of course, not the case with distilled fatty acids. It may also be noted that when using fatty acids irrespective of their origin, it is advisable to use an addition of resin, as such improves the stability of soap against rancidity.

In conclusion some patented processes for the manufacture of soaps from fatty acids will be mentioned. The German patent 664,289 (similar to the U.S.A. patent 1,560,620) by A. Welter protects a process to manufacture a stable, powdered or formed soap by mixing fatty acids, with or without solvents, with the same or double the amount of soda ash which is necessary for saponification, at a temperature as low as possible for a sufficient mixture. Then 50 per cent of water calculated on the amount of fatty acids are added and after having saponified, the mixture is formed or milled if necessary by adding a small amount of other soap. (Additions of salt which do not split sodium bicarbonate are possible. Special processes of milling and forming are also described).

The Canadian patent 375,547 (Procter & Gamble Co. of Canada, Ltd.) describes the following process: To begin with, neutral fats are split by a continuous process with water in a vertical chamber in which the fat or oil is directed against the water at a temperature of 365-600°F. under sufficient pressure. The derived fatty acids and the water containing the glycerine are separately removed. After this splitting process, the fatty acids are mixed with alkali at a temperature not much lower than that during the splitting process. The derived liquid soap mass is sprayed to powder in comparatively cold air.

Another spray process is described by the German patent 375,369 (addition to patent 374,210, A. Welter). Water and fatty acids are sprayed against a continuously moving highly dispersed spray of soda ash. The derived soap powder contains more or less soda, and more or less pure soap.

A combination soap holder and applicator consists of a body of permeable material having a compartment to receive a cake of soap. A rigid plate is secured at one end. A flexible part closes automatically after insertion of the soap. Leland J. Arms. Canadian Patent No. 381,610.

[8] *Seifensieder-Zeitung* 1936, p. 621.

[9] F. Wittka, *Seifensieder-Zeitung* 1939, No. 9 and 10.

Sanitary Products SECTION

A Section of "SOAP" dealing with

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PYRIN is safe to handle and safe to spray because it is derived from perfectly innocuous vegetable materials which are themselves harmless to humans. **Even in concentrated form** it is non-toxic to laboratory animals in a variety of known tests.

No fear or doubt attaches to PYRIN. It has been thoroughly proved an efficient insecticide base. If your product is to be kept **safe,** first, last and always, PYRIN is made for you.

JOHN POWELL & CO., Inc.

114 East 32nd Street — New York City

PARATINTS

GIVE YOU A CHOICE OF

MANY COLORS—MANY SCENTS

WHEN you use Givaudan PARATINTS you have a wide and interesting variety of scents and colors to choose from. The PARATINT line is the complete, modern line for scenting para blocks and moth balls in one operation. Each of the combinations listed below is developed to effectively offset the odor of paradichlorobenzene and at the same time impart a pleasing fragrance and a uniform, brilliant color. They are efficient, convenient to use and the price is low. Check over the types offered at the right and write us for samples of the ones you prefer. Paratints are also available without color.

LILAC (Purple)	WISTERIA (Purple)
NARCISSE (Yellow)	PINE (Green)
LAVENDER (Lavender)	ROSE (Rose)
SWEET PEA (Green)	CARNATION (Red)
JASMIN (Yellow)	VIOLET (Violet)
ORIENTAL (Orange)	GARDENIA (Tangerine)
ORANGE BLOSSOM (Orange)	NEW MOWN HAY (Yellow)

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for Paradichlorbenzene

Series A $1.00	*Series B* $1.50	*Series C* $2.00
Bouquet A	Bouquet B	Bouquet C
Lilac A	Lilac B	Lilac C
Rose A	Rose B	Rose C
Violet A	Violet B	Violet C
Sweet Pea A	Sweet Pea B	Sweet Pea C
Gardenia A	Gardenia B	Gardenia C

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SECTOROMES NORDA

for fly sprays

Priced at 50c and $1.00 per pound

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TOPS IN FIELDING

—but his batting average keeps him in the dugout!

Competent fielding isn't enough to keep a man on the team. He's got to be good when he steps up to the plate — or he'll lose out to the man who can do a good job in every department.

Insecticides have the same problem. An insecticide that does only a limited job doesn't stand a chance in competition with a product that gives all-round performance.

Naturally, you have faith in your insecticide. You confidently believe that you are giving your customers their money's worth... and sometimes more. But do you *know?*

For instance, do you really *know* whether your insecticide is effective against such pests as roaches, ants, silverfish, moths and bedbugs? You cannot always depend on the Peet-Grady test to give you the answer.

The Peet-Grady test, of course, does not indicate the effectiveness of an insecticide against pests other than flies. Certain synthetics may have a high rating by the Peet-Grady test, yet fail completely when used against roaches.

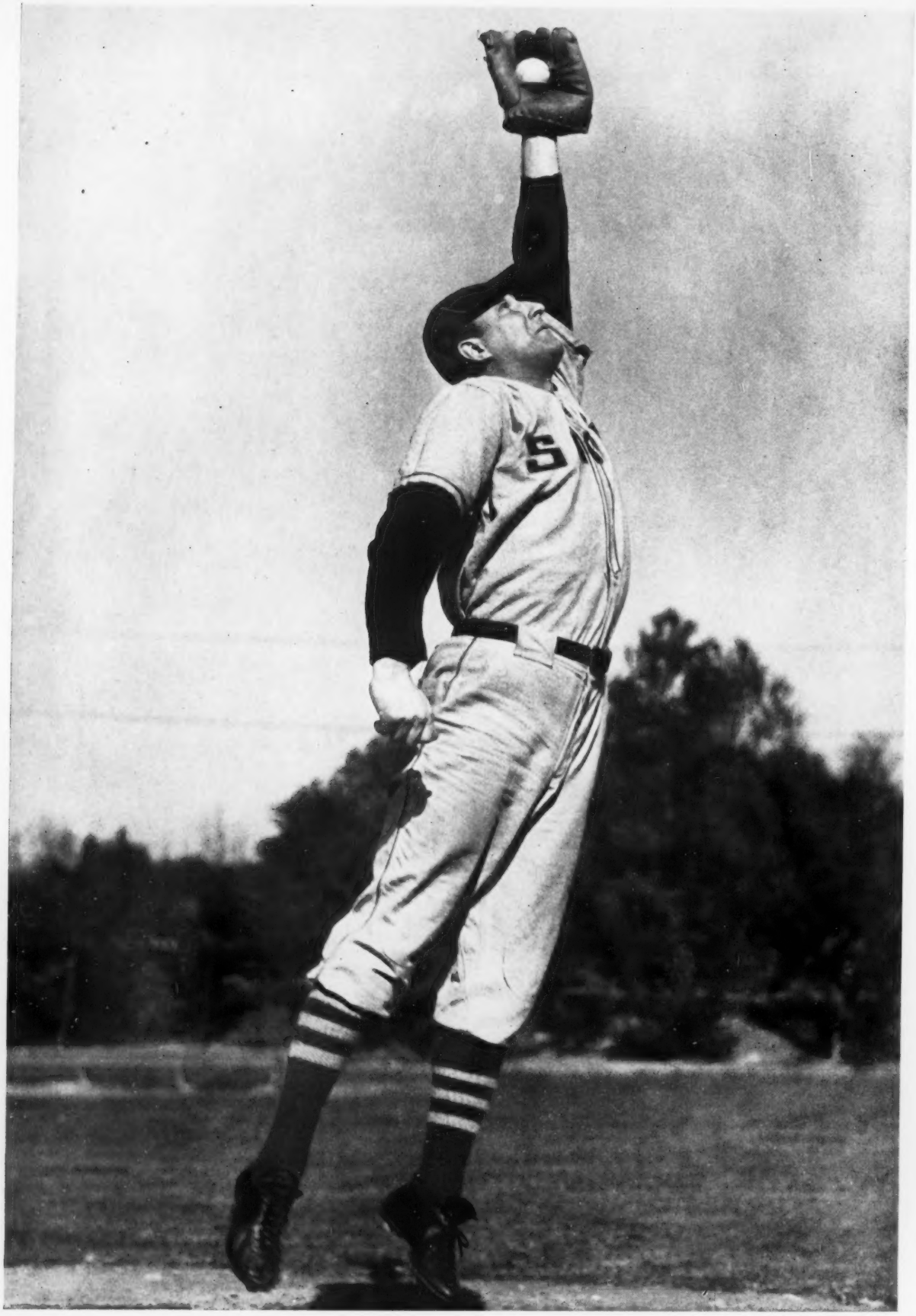
Then again, when certain synthetics are added to pyrethrum concentrates, a misleading analysis results . . . the Seil test showing a higher percentage of pyrethrins than is actually present.

But there's one sure way of knowing that your insecticide is doing a complete job. Use Pyrocide 20. For ten years, Pyrocide 20 has proved effective not only against houseflies, but also against roaches, ants, silverfish, moths and bedbugs. Pyrocide 20 contains no synthetics. There is nothing to interfere with analysis. It has been specially treated to remove "false" pyrethrins and consequently the Seil test shows the actual amount of pyrethrins present.

Guaranteed to contain 2.5% pyrethrins by weight — 2 grams per 100 c.c. — Pyrocide 20 is analyzed twice during manufacture and once before being shipped to you. McLaughlin Gormley King Company, Minneapolis, Minnesota.

PYROCIDE 20

THE PUREST FORM OF PYRETHRINS COMMERCIALLY AVAILABLE



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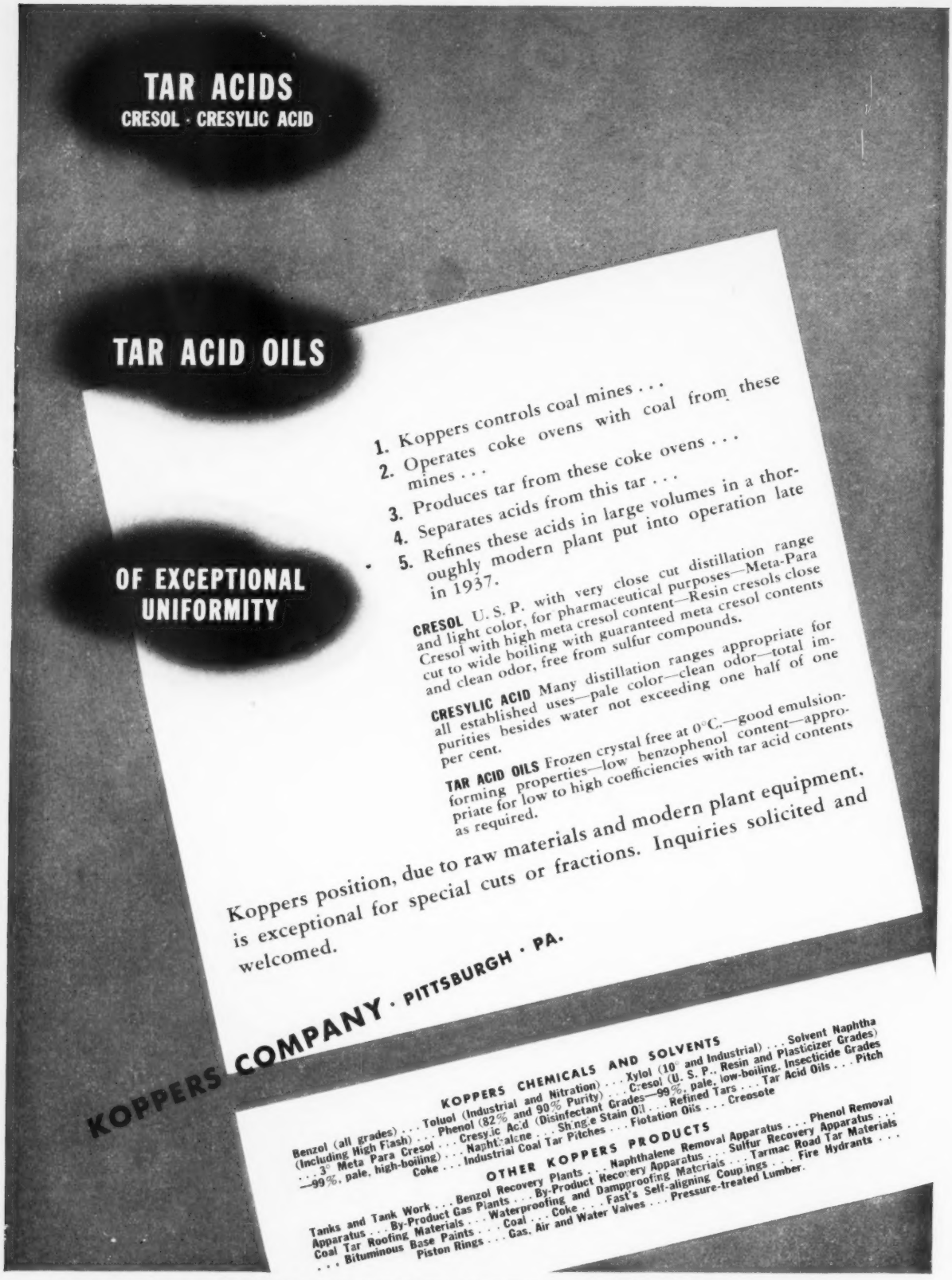
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REFINED NAPHTHALENE—Crushed, Crystals, Powder, Lump, Chips, Flakes. For use in manufacture of deodorizing blocks, moth preventives and other insecticides. Also Naphthalene in Balls, Blocks, Tablets · **COAL TAR DISINFECTANTS**—Co-efficients 2 to 20 plus, F. D. A. Method · **CRESOL AND CRESYLIC DISINFECTANTS** · **PINE OIL DISINFECTANTS** · **PINE OIL DEODORANTS** · **CRYSTAL AND BLOCK DEODORANTS** · **LIQUID INSECTICIDES** · **DEODORIZING BLOCKS**—Pressed Naphthalene or Paradichlorobenzene. Various sizes and shapes. Perfumed and plain. Bulk industrial packages, retail packages. Write to Kearny, N. J.

The SPIDER TAKES HIS HAT OFF *to* PYREFUME

"The Perfected Pyrethrum Concentrate"

PYRETHRUM IS STILL KING OF FLY-KILLERS—a proven scientific insecticide, harmless to man. And Pyrefume, today more than ever, deserves its title of "The Perfected Pyrethrum Concentrate." Every procedure in its manufacture is as scientific as a sterilization chamber. For one thing . . .

TRIPLE-CHECK LABORATORY TESTS GUARANTEE THAT PYREFUME SUPER 20 CONTAINS NOT LESS THAN 2 GRAMS OF PYRETHRINS IN EVERY 100 cc.

PYREFUME IS STANDARDIZED—
GUARANTEED IN PYRETHRINS CONTENT

Other advantages that have made Pyrefume a scintillating insecticide base include (1) test for above standard "knock-down-and-kill" potency (2) unique stability (3) clear blending (4) unusually non-staining (5) singularly free from unpleasant odor (6) low in cost.

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NEUTRACENE

An effective deodorizer for fly spray. Use 1/16 ounce to one gallon of spray to neutralize bad odor . . . then add ⅛ to ¼ ounce of any one of the following top bouquet odors . . .

ODOCENE

Reliable specialty of proven merit. Pleasant type odor of enduring character.

PETROMA

Floral type, having a pleasing Wisteria background.

FLOCENE

Floral type of attractive character but giving no definite flower impression.

VITACENE

Possesses a clean, refreshing scent. New modern odor. Remarkable coverage without leaving a definite perfume.

VANASPRA

Produces the definite Vanilla types of odor. Suitable for use in bakeries, confectioners, restaurants, etc.

FRUITSPRA

This odor gives results in harmony with the odors around fruit and vegetable stores where perfume would not be desirable.

Theatre Spray Odors

APCO WATER SOLUBLE OILS SERIES "S"

Our laboratories have worked incessantly during the past two years to produce a new line of improved water soluble oils which will remain clear in a water solution. An attractive Theatre Spray may be obtained by using from 2 to 4 ounces of this water soluble oil to one gallon of warm water. If you cannot find the odor you desire in the following list, write us and our Laboratories will develop the particular type for you.

Bouquet	Jasmin	Rose	Orange
Chypre	Lemon	Mint	Oriental
Fougere	Trefle	Pine	Orange
Violet	Narcisse	Lilac	Blossom
Gardenia		Wisteria	

Parafume Series

No. 200

Our Parafumes were produced especially for use in Deodorizing Paradichlorbenzene Blocks, Bath Salts and Naphthalene Crystal Preparations. These oils are powerful and will penetrate the product uniformly and the odor will last until the Block or Crystals have completely evaporated. From the following list you will note that our Parafumes contain both perfume and color, but if you prefer the odor without color, we are in a position to supply them without color. We suggest using from 8 to 16 ounces per 100 pounds of Crystals.

CEDAR-PINE (*amber color*)	VIOLET (*violet color*)	LILAC (*lilac color*)	PINE (*green color*)
ORIENTAL (*amber color*)	JASMIN (*amber color*)	NARCISSE (*amber color*)	ROSE (*rose color*)
LAVENDER (*lavender color*)	ORANGE BLOSSOM (*orange color*)	CARNATION (*cerise color*)	

Aromatic Products, Inc.

15 East 30th Street, New York City — Factory: Springdale, Conn.

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Announcement

DURING the course of business in the past year it has become increasingly apparent to us that a thoroughly equipped sales office in the Middle West is necessary to the proper service of our many friends in the area.

Accordingly it is our pleasure to announce the opening of our new Chicago Office, now ready to take up the many duties it will fulfill.

It is our sincere wish that those of you in that section of the country will call on our new office for the assistance it is prepared to render. We want you to remember it was created for that purpose.

CLARIFIED PYRETHRUM CONCENTRATE

PYRETHRUM POWDER

POWDERED CUBE AND DERRIS

R. J. Prentiss & Co., Inc.

New York Chicago

U. S. Specifications for Soaps and Sanitary Chemicals? *See the new 1939*

BLUE BOOK

When you have an opportunity to bid on soap and sanitary chemical requirements for any branch of the Federal government or when bids from other quarters specify "according to U. S. Specifications" then your BLUE BOOK serves another useful purpose. In the reference section are complete specifications for chip soap, cake grit soap, hand grit soap, liquid laundry soap, ordinary laundry soap, powdered laundry soap, soap powder, salt-water soap, auto soap, potash linseed soap, white floating toilet soap, liquid toilet soap, milled toilet soap, powdered toilet soap, laundry soda, mechanics hand detergent, sweeping compound, paste metal polish, silver polish, stove polish, scouring powders, insect powder, and floor waxes. N.A.I.D.M. specifications for insecticides and disinfectants are there too. Why be without this valuable and constantly useful reference material? It is in the BLUE BOOK, along with other worth while information, in handy form.

A limited number of *free* copies of the new 1939 BLUE BOOK are still available to new subscribers.

The New BLUE BOOK includes

Buyers Guide — Listing everything readers of SOAP buy,—raw materials, machinery, packaging materials, bulk soaps, sanitary products, accessories, etc., with a comprehensive list of leading suppliers of each item.

Toilet Soap Manufacture —A discussion of manufacturing problems.

Soap Perfuming — A review of the principal types of perfuming materials, with comments on difficulties encountered with each in perfuming soaps.

Glass Cleaners — Composition and use of windshield, window and glass cleaners.

Moth Specialties —A discussion of moth products of the powdered, cake and liquid types.

Hand Soaps — Methods and formulas for the manufacture of hand cleaners.

Wax Polishes —Results of a laboratory investigation of wax polishes, indicating how choice of ingredients affects gloss, hardness of film, water resistance, color, odor, etc.

Specifications —A resume of U. S. specifications for soaps, polishes, waxes, cleaners, chemicals, etc. Specifications of Natl. Assn. Insecticide & Disinfectant Mfrs. for insecticides and disinfectants.

Index to SOAP — Composite index to the monthly issues of SOAP, 1934 through 1938.

Directory of Association Officers, Charts and Tables.

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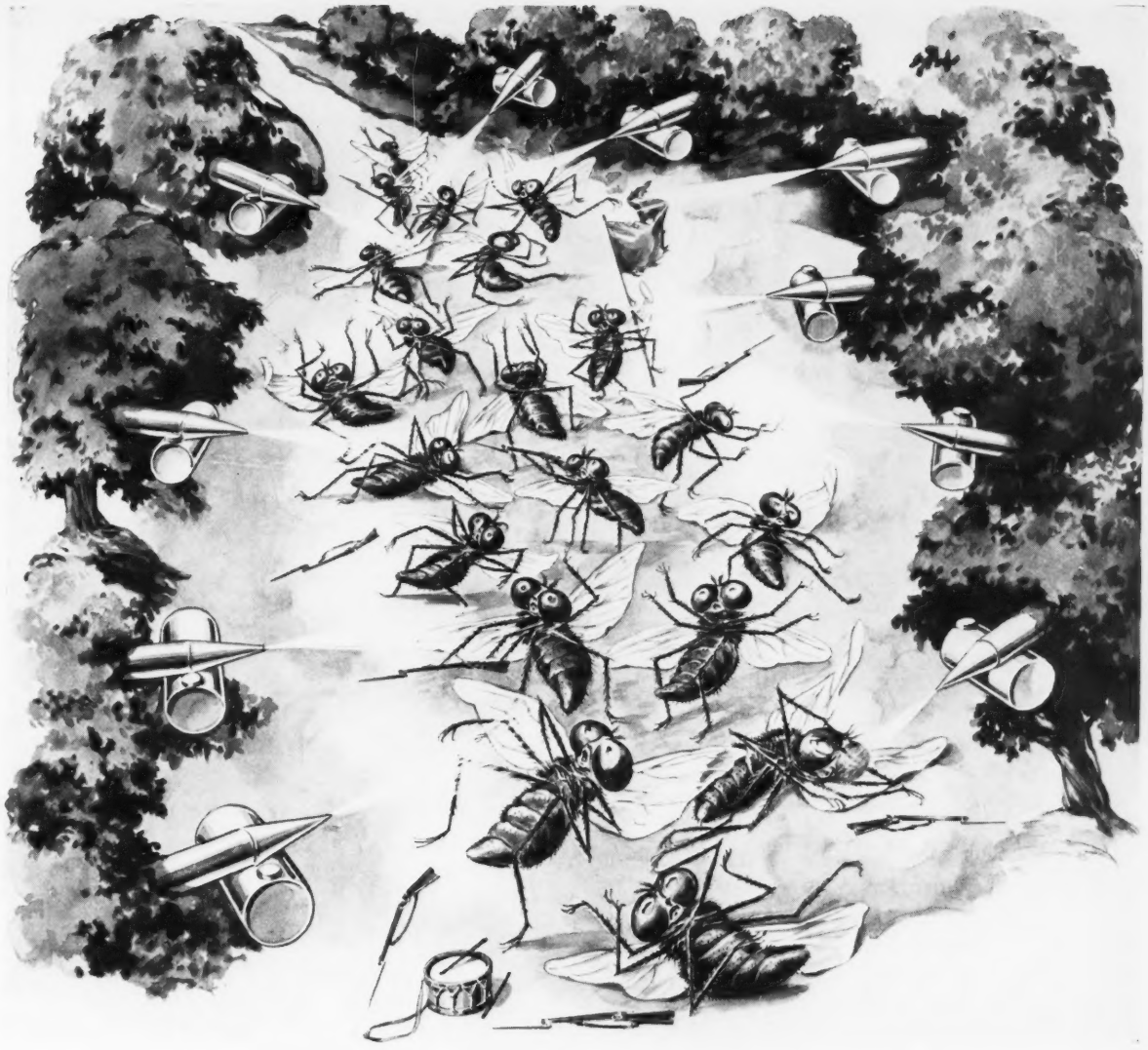

AMBUSHED ARMY

Insects don't stand a chance when an Atlantic Ultrasene-base insecticide goes after them.

Atlantic Ultrasene is refined solely for use as a carrier for insect killers. Unlike a kerosene base, Ultrasene evaporates readily, leaves no unpleasant odor, no oily residue. That's why proprietors of places where food is stored or prepared—men who must constantly guard against dirt-collecting oil films and disagreeable odors in restaurants, hotels, markets—are demanding Ultrasene-base insecticides. That's why successful insecticide manufacturers are choosing Ultrasene for their spray-base.

Find out more about Atlantic Ultrasene. Our technical department will help you with further information and liberal experimental samples. The Atlantic Refining Company, Specialty Sales Department, 260 South Broad St., Philadelphia, Pa.

ATLANTIC ULTRASENE ***—A BETTER BASE FOR BETTER INSECTICIDES***

OFFICIAL TEST INSECTICIDE

THE 1939 Official Test Insecticide specified for evaluating liquid household fly sprays by the Peet-Grady Method according to the official procedure of the National Association of Insecticide & Disinfectant Manufacturers, is stocked for prompt shipment in cartons of one dozen six-ounce bottles and in single six-ounce bottles.

Send orders or requests for information direct to the Executive Office of the National Association of Insecticide & Disinfectant Manufacturers, 110 East 42nd St., New York. The official test insecticide is available to all firms or laboratories whether members of this Association or not.

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Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street New York

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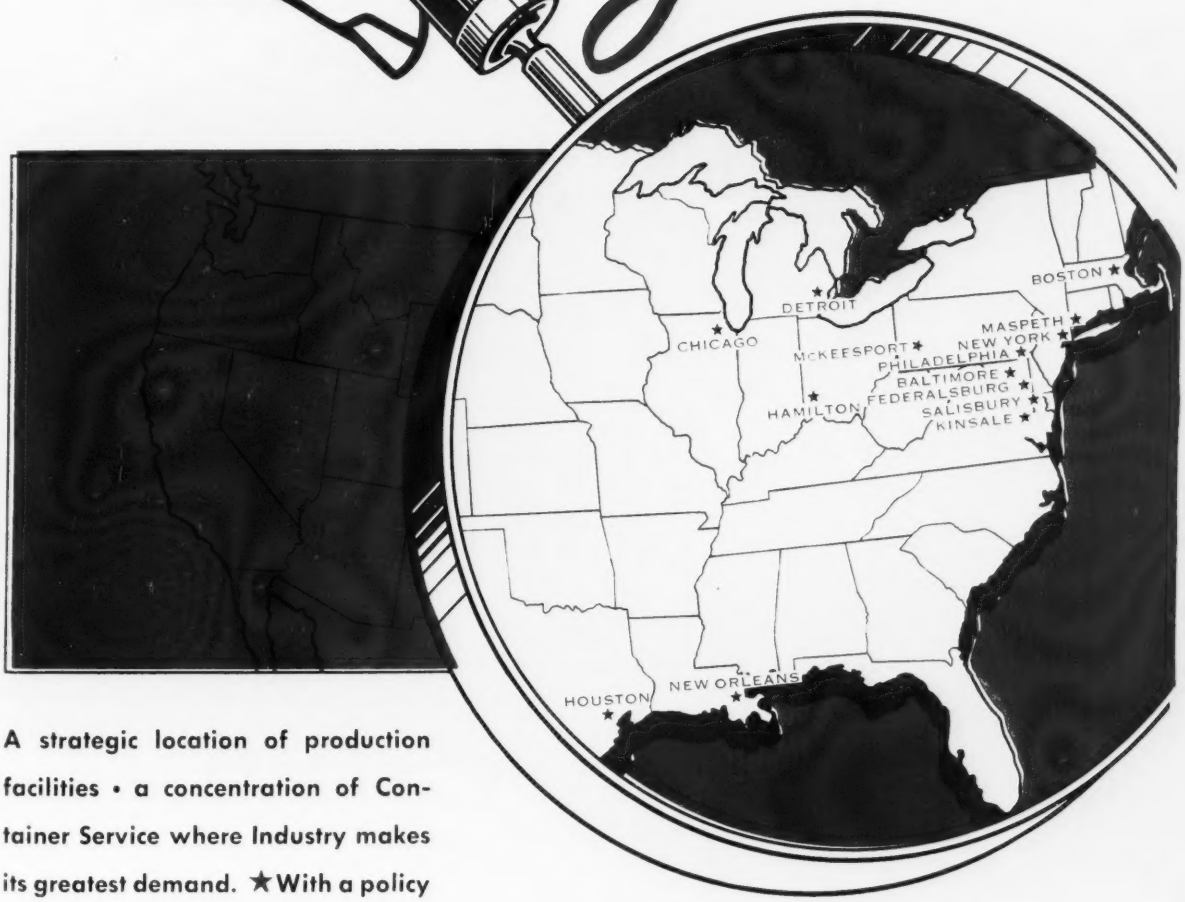

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USERS OF PARA-DICHLOROBENZENE LIKE THE UNIFORMITY OF

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● No matter how many times you re-order "Parapont" para-dichlorobenzene, you can always be certain of getting the same high quality every time, because du Pont standards of purity and uniformity are constantly maintained. "Parapont" is available in six granulations to fill every commercial need, and in any quantity. Place a trial order, and we are sure you'll be back for more.

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THERE'S A BIG MARKET FOR AGREEABLY SCENTED FORMALDEHYDE PREPARATIONS

Perfume them correctly with

FELTON

FORMAROMES!

Theatres, hospitals, office buildings . . . in fact almost any place where people congregate are in most cases buyers of antiseptic and deodorant sprays of the formaldehyde type. Sales, however, are frequently limited by the inherently disagreeable odor of Formaldehyde itself.

To overcome this objectionable feature, Felton Chemical Company has developed a line of special aromatics . . . Formaromes . . . which definitely neutralize the inherent odor and impart an agreeable, pleasant scent to formaldehyde preparations, such as:

★Disinfectant Sprays
★Antiseptic and Deodorant Sprays
★Embalming Preparations

Send us a sample of your formaldehyde preparation. Our laboratory will recommend the proper formarome to use with it.

FORMAROMES WILL IMPROVE THE ODOR OF

FELTON Quality

ALL TYPES OF FORMALDEHYDE PRODUCTS

FELTON CHEMICAL COMPANY Inc.

Manufacturers of AROMATIC CHEMICALS, NATURAL DERIVATIVES, PERFUMES OILS, ARTIFICIAL FLOWER and FLAVOR OILS

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Ever since we introduced BAC-TROL a little over a year ago, we have had a constant demand for a similar product with a lower Phenol Coefficient than five. Wherever BAC-TROL has been introduced, it has met with remarkable success and repeat business has always been assured. Due to the fact, however, that BAC-TROL is such a relatively high-priced product, it was found difficult by jobbers to make sales in some cases where price was the main factor.

●

RED LABEL BAC-TROL with a Phenol Coefficent of THREE, F.D.A., is now available. This new disinfectant has exactly the same odor as our regular BAC-TROL.

●

RED LABEL BAC-TROL has the following advantages:

- RED LABEL BAC-TROL is non-toxic, non-irritating, non-corrosive, non-caustic, non-poisonous.
- Does not injure clothes, metals, paint, woodwork, etc.
- The odor is so pleasant that no one would suspect premises of having been disinfected when RED LABEL BAC-TROL has been used for this purpose.
- RED LABEL BAC-TROL also can be used in the home and because of its delightful, fragrant odor, it can be used as a bath deodorant by sprinkling a few drops in the bathtub before bathing.
- Manufactured by experts who have specialized in the production of the finest disinfectants for over thirty years.
- And last, but not least, the odor of RED LABEL BAC-TROL cannot be matched by any other disinfectant in pleasing fragrance.

Premises disinfected with RED LABEL BAC-TROL are left with a clean, refreshing fragrance. When used in the proper dilution, it is non-irritating—forming snow-white solutions with water.

RED LABEL BAC-TROL does not leave greasy or gummy film where used—it is manufactured with pure vegetable oil soap.

The cost of RED LABEL BAC-TROL is 36% lower than the price of BAC-TROL. With this new low price it is possible to build up a large and profitable volume of business on this new pleasant type of disinfectant. RED LABEL BAC-TROL will be sold only to legitimate wholesalers and jobbers. Add this product to your line and watch your sales and profits increase.

Write today for a free sample and detailed information on RED LABEL BAC-TROL

BAIRD & McGUIRE, INC.

St. Louis, Mo. Holbrook, Mass.

Sanitary Products

A Section of SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

A RECENT seizure and judgment under the Insecticide Act of 1910 covering a paradichlorbenzene product offered for moth control caused misgivings among other marketers of similar products. The impression was secured by some manufacturers that the seized product had carried label recommendations of four-ounces to 20 feet of tightly closed space for moth control,—and that possibly the Food & Drug Administration had revised its ratio of one-pound per 100 cubic feet. A check-up with the F.D.A. showed no change and brought out the explanation that the seized product had recommended something less than a quarter-ounce for 20 feet, far under the permitted minimum. The label in question has since been changed. So, manufacturers who had any idea that their own labels might be faulty in the light of this seizure, may rest their minds. The official minimum remains unchanged at one pound to every 100 cubic feet of tightly closed space.

THE purchase of liquid spray insecticides by the City of New York runs into large figures every year. Heretofore, the ability of the City to test the products which it purchased in order to determine if they met the specifications in question, has been distinctly limited. Now, the Department of Purchase is planning to install complete Peet - Grady testing equipment so that it will be able to determine biologically, as well as chemically, if the materials supplied by bidders come up to the mark.

This is a sign of the times,—and a good sign, a step toward standardized purchase of products by government departments which for too many years in too many cases have been bought on ridiculous specifications which were seldom met. Although this represents only one step toward the more intelligent purchase of insecticides, it is a mark of progress. Maybe the ten-year efforts of the National Association of Insecticide & Disinfectant Manufacturers in this direction are beginning to show results.

CONSIDERABLE quantities of paint and wall cleaning preparations are sold every year, the majority being trisodium phosphate or mixtures of this or other alkaline salts occasionally with a small amount of soap. Sometimes as a result of faulty or too frequent use, the gloss of the paint is removed. To restore this gloss and to make future cleaning easy, "Consumers' Guide" published by the Agricultural Adjustment Administration, Washington, suggests the use of regular water wax. Although this suggested use is not new to some wax manufacturers, it may be to others. There is a possibility that its development might present an increased outlet for water wax.

Resistance to Insecticides

The effect of knockdown and light doses on the resistance of houseflies to pyrethrum sprays.

By E. R. McGovran, W. N. Sullivan, and G. L. Phillips*
Bureau of Ent. & P. Q., Dept. of Agriculture

ENVIRONMENTAL conditions and the physical conditions of insects have been recognized for some time as having considerable influence on the effectiveness of insecticides. Furthermore, it has been shown in some instances that initial light doses of fumigants have made the insects temporarily more resistant. Lindgren[2] states that both the [California] red scale (*Aonidiella aurantii* (Mask.)) and the black scale (*Saissetia oleae* (Bern.)), which are citrus pests, become more difficult to kill if they have first been exposed for a short time to a sublethal concentration of hydrocyanic acid gas. This increase in resistance, which is called "protective stupefaction," occurred with the granary weevil (*Sitophilus granarisu* (L.)) but did not occur with the confused flour beetle (*Tribolium confusum* (Jacq.-Duv.)), and the convergent ladybeetle (*Hippodamia convergens* (Guer.)). Lindgren also demonstrated that the "protective stupefaction" of the California red scale was temporary and was followed by a period of reduced resistance, after which the insects returned to normal resistance. Pratt, Swain, and Eldred[4] state that an exposure of more than one minute but less than three minutes to a sublethal concentration of hydrocyanic acid is necessary to cause this increased resistance of certain scale insect pests on citrus. Moore and Carpenter[3] found that by reducing the air pressure in a fumigation chamber certain insects became inactive and that these conditions had an effect on the resistance of some insects to hydrocyanic acid. They state that the best kills of the confused flour beetle were obtained with inactive insects at 1- to 2-mm. air pressure, whereas the best kills of the rice weevil (*Sitophilus oryzae* (L.)), the granary weevil, the flat grain beetle (*Laemophloeus minutus* Oliv.), the cigarette beetle (*Lasioderma serricorne* (F.)), and the saw-toothed grain beetle (*Oryzaephilus surinamensis* (L.)) were obtained at 30 to 60 mm., where the insects were active. They also state that the lesser grain borer (*Rhizopertha dominica* (F.)) showed no difference in kill between 2 mm. and 60 mm. air pressure. With these facts in mind it seemed desirable to determine what effect, if any, the knockdown (paralysis) of houseflies, which certainly has a marked effect on the activity of the insects, had on their resistance to the pyrethrum-kerosene sprays.

Materials and Methods

The tests were made by a modification of the turntable method described by Campbell and Sullivan[1]. Houseflies (*Musca domestica* L.), reared on Richardson's media to which powdered dried milk had been added, were exposed to a settling spray mist for 10 minutes. In some treatments the knocked-down flies were exposed to the air in the laboratory for five minutes and were then replaced in the turntable and exposed for 10 minutes to another settling spray mist. In other treatments the flies were sprayed only once. Ether was used alone and with a kerosene spray to knock down the flies in some tests. It was applied as a vapor from a wad of cotton. The wad of cotton treated with about 50 cc. of ether was placed in the cylinder with the test flies 30 seconds after the test had started. The wad was removed two minutes later. When acetone was used to knock down the flies, five cc. was sprayed into the cylinder.

The pyrethrum-kerosene spray concentrate was prepared by Dr. H. L. Haller, of the Division of Insecticide Investigations, Bureau of Entomology and Plant Quarantine, and contained five mg. total pyrethrins per cc., of which 45.6 per cent was pyrethrin I and 54.4 per cent was pyrethrin II. This concentration of pyrethrins was obtained by dissolving in the kerosene a pyrethrum oleoresin which contained 11.28 per cent pyrethrin I and 13.42 per cent pyrethrin II. The pyrethrum-kerosene spray used in table 1 contained 4 mg. of pyrethrins per cc. of kerosene. The concentrations of pyrethrins used in table 2 were 0.5, 1.25, and 2.0 mg. per cc., as shown in the table. All the pyrethrum-kerosene sprays used in these tests were prepared by diluting the 5-mg.-per-cc. concentrate with kerosene. The kerosene used was a refined product having the follow-

* Address by Dr. McGovran before 26th mid-year meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., June, 1939, New York.

Table 1—Mortality of active and knocked-down houseflies sprayed with pyrethrum-kerosene sprays.

Treatment No.	First spray: Material applied to active flies	Second spray*: Material applied to knocked-down flies	Mortality
			Percent
1	Ether**	Pyrethrum-kerosene	21
2	Kerosene followed by ether**	do.	34
3	Acetone	do.	45
4	Pyrethrum-kerosene	None	49
5	do.	Kerosene	69
6	Ether	None	1***
7	Kerosene followed by ether	do.	0***
8	Acetone	do.	1***
9	Kerosene	do.	1***
10	do.	Kerosene****	7***
Minimum significant difference between any two of treatments Nos. 1-5 at odds of 19 to 1			7.1

*Second spray applied 5 minutes after the end of the first spray application.
***Mortalities for treatment 6 to 10 inclusive are the averages of 2 tests.
**Ether was not applied as a spray but as a vapor from a wad of cotton.
****Flies not knocked down.

ing specifications, which were furnished by the manufacturer: Specific gravity, 0.775-0.785; Saybolt viscosity at 100° F., 30 seconds; flash point, 170-180° F.; initial boiling point, 370-390° F.; distillation end point, 480-500° F.; Saybolt color, 30 plus (waterwhite); unsulfonatable residue, above 98 per cent; odor, practically none; acid test, U.S.P. Where kerosene or pyrethrum-kerosene spray was used, 2.5 cc. was used in each application. The treatments used are given in tables 1 and 2.

The mortalities listed in the tables, except as otherwise indicated, are averages obtained from 10 tests of about 150 flies per test. The method of analysis of variance was applied to the data for these tests, and the difference between any two mortalities that would be required to indicate that two treatments gave significantly different results (i. e., at odds of 19 to 1) was determined.

Results

In all the treatments that knocked down the flies, most of the flies were knocked down in from 1 to 3 minutes and 100 per cent of them were knocked down by the end of the 10-minute exposure in the spray cylinder.

A comparison of treatments 1 and 4 in table 1 shows that flies that have been knocked down with ether are much more resistant than are active flies sprayed with the same pyrethrum-kerosene spray. Treatment 3 shows that flies knocked down with acetone were less resistant than were those knocked down with ether. In comparing the flies knocked down with acetone with those knocked down with ether before the pyrethrum-kerosene spray was applied, it was noted that the acetone-treated flies exhibited more twitching motions of the legs, wings, and abdomens. A comparison of treatments 1 and 2 in table 1 shows that, when a kerosene spray mist was applied just before the ether so that the flies were knocked down in approximately the same time as with a pyrethrum-kerosene spray, the resistance of the flies was lowered slightly as compared with that of flies knocked down with ether alone.

Treatments 2 and 5 in table 1 show the results obtained when the same amounts of kerosene and pyrethrum are applied to similar groups of flies. In treatment 2 the kerosene was applied to the active flies which were then knocked down with ether and the pyrethrum-kerosene spray was applied to the knocked-down flies. In treatment 5 the active flies were treated with pyrethrum-kerosene spray and the knocked-down flies were sprayed with kerosene. A higher mortality occurred where the pyrethrum-kerosene spray was applied to the active flies. However, there is the possibility that ether, if applied to flies knocked down with pyrethrum sprays might inhibit the action of pyrethrins. If this is the case, the ether treatment might account for some of the difference in kill between treatments 2 and 5.

Treatments 6 to 10 show that there was little kill where the pyrethrum-kerosene spray was not used. It is interesting, however, to note that in treatment 10, where two kerosene sprays were applied and the flies were not knocked down, a slight mortality did occur.

The data in table 2 show that when a kerosene spray high in pyrethrins content (treatment 3) was applied to the active flies and followed by a kerosene spray low in pyrethrins content applied to the knocked-down flies, a higher percentage of mortality was obtained than when the sprays were applied in the reverse order (treatment 1). Treatment 2 in table 2, which was a kero-

Table 2—Mortality of houseflies from a double exposure to kerosene sprays of varying pyrethrum content.

Treatment No.	First spray: Pyrethrins per cc of kerosene applied to active flies	Second spray*: Pyrethrins per cc of kerosene applied to knocked-down flies	Mortality
	Mg.	Mg.	Percent
1	0.5	2.0	63
2	1.25	1.25	70
3	2.0	0.5	74
4	0	0**	***5
Minimum significant difference between any two of treatment Nos. 1-3 at odds of 19 to 1			5.7

*Second spray applied 5 minutes after the end of the first spray application.
**Flies not knocked down.
***Average of 2 tests.

sene spray of medium pyrethrins content followed by a similar spray, gave a significantly higher mortality than when a spray low in pyrethrins content was applied to the active flies followed by a spray high in pyrethrins content. However, it did not cause a significantly lower mortality than did the application of a spray high in pyrethrins content to the active flies followed by a low pyrethrin-content spray on the knocked-down flies.

Discussion

Preliminary tests indicated that flies sprayed with kerosene which did not contain some paralyzing agent continued to crawl and collected such large quantities of kerosene on themselves that considerable mortality resulted. These flies appeared to be much more heavily coated with kerosene than flies that were sprayed with kerosene that contained enough pyrethrins to knock them down. This was the reason for using ether to knock down the flies in treatment 2, table 1. The same factor operated to allow the active flies sprayed with low-pyrethrin sprays to pick up more spray by buzzing and crawling on the floor of the cage. The difference in the time required to knock down the flies was small, but it seems that such difference as did exist tended to increase the amount of the more slowly acting spray that collected on the flies knocked down less promptly. In spite of this, the low concentration of pyrethrins in the spray applied to active flies followed by high concentration of pyrethrins applied to the knocked-down flies gave a lower mortality than when the sprays were applied in the reverse order.

From the point of view of fly control it seems that flies, after being knocked down with pyrethrum-kerosene sprays, are more resistant to spray than are active flies. This indicates that to obtain high mortalities the flies should receive a lethal dose of spray before being knocked down.

Summary

Houseflies that had been knocked down (paralyzed) with ether, acetone, or kerosene sprays low in pyrethrin content (0.5 mg. per cc.) were more resistant to kerosene sprays high in pyrethrin content (2.0 or 4.0 mg. per cc.) than were normal active flies.

Literature Cited

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[2]Lindgren, D. L. 1938. The stupefaction of red scale, *Aonidiella aurantii*, by hydrocyanic acid. *Hilgardia* 11(5):211-225, illus. May.

[3]Moore, William, and Carpenter, E. L. 1938. The fumigation of insects with hydrocyanic acid: Effect of different air pressures. *Jour. Econ. Ent.* 31(3):419-426, illus. June.

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Disinfection Solvents

Benzene, ethylene trichloride, carbon tetrachloride and similar cleaning fluids do not show disinfectant action in the absence of water. Emulsification with water favors disinfection. Quaternary ammonium bases are especially good as emulsifying agents. R. W. Vierthaler. Z. Hyg. Infektionskrankh. **121**, 447-64 (1939); through Chem. Abs.

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New Compound in Derris

In the extraction of 1620 grams of derris root with ether, 24.8 grams of solid material separated out. Concentration of the extract and treatment of the viscous residue with methyl alcohol and ethyl acetate gave 25.6 grams of a white solid which, on recrystallization from methyl alcohol, yielded a new substance, derride, $C_{20}H_{10}O_6$, melting at 162-3°C. This gave a purple color with sulfuric acid in the presence of sodium nitrite, a deep blue color with nitric acid and a few drops of ammonium hydroxide, but no color with alcoholic ferric chloride. Th. M. Meyer and D. R. Koolhaas. Rec. trav. chim. **58**, 207-17 (1939); through Chem. Abs.

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Moth-proofing Method

Textile fabrics are moth-proofed by immersion in a bath of a liquid hydrocarbon containing a dispersed aqueous 4-10 per cent solution of magnesium silicofluoride, in the proportion of about 1 ounce of aqueous solution to 1 pound of dry fabric. The fabric being treated is agitated in the liquid mixture long enough to cause substantial clarification of the hydrocarbon, indicating absorption of the aqueous solution by the fabric. One per cent of dispersing agent is needed to disperse the aqueous solution in the hydrocarbon. August C. Fischer. Canadian Patent No. 381,606.

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Rust Removal

Rust and other coatings are removed from metal surfaces and rust spots from fabrics by treatment with a water-soluble amino carboxylic acid containing one or more basic nitrogen atoms that are attached to at least two organic residues, each containing a carboxyl group in *alpha*-position to the nitrogen atoms,—or with a water-soluble salt of such an acid. The acids are preferably used in alkaline solution and polishing powders having abrasive action, salts, emulsifying agents,—and for treating rust, reducing agents such as sodium thiosulfate or grape sugar, may be added. Among examples of metal polishes, (1) kieselguhr is made into a paste with a solution containing dextrin and sodium nitrilotriacetate, and (2) white oil is mixed with alcohol, disodium nitrilotriacetate, bentonite, water, borax, siliceous chalk, rosin and dilute ammonia-water. A cotton fabric is freed from stains of iron rust by treatment with an aqueous solution containing sodium hyposulfite and sodium nitrilotriacetate, a little ammonia being preferably added. I. G. Farbenindustrie A.-G. British Patent No. 492,526.

Unfair Invitations to Bid

By Gordon Baird*
Baird & McGuire, Inc.

THE task of the Committee on Public Purchases of the National Association of Insecticide & Disinfectant Manufacturers is to see what can and cannot be done about some of the difficulties and confusion existing in the purchasing of disinfectants and insecticides by various public and tax-supported agencies and institutions throughout the country. This committee is composed of Frank O. Huckins of the Sinclair Refining Co., Chicago; Charles Van Dyne of the American Disinfecting Co. of Sedalia, Mo., and the writer.

From time to time, members of the Association have sent specifications to this Committee, pointing out various faults and discrepancies and asking us to call these to the attention of the purchasing agents. Many letters along these lines have been sent out by the chairman to cities, states and branches of the Federal Government. When the specifications upon which disinfectants and insecticides are being purchased are unreasonable, or let us say, out of the question, your Committee has done all in its power to bring about the use of the official Commercial Standards covering disinfectants and insecticides. The fact has been pointed out to them that all manufacturers are familiar with these specifications and therefore, able to bid intelligently, and in the long run, enable the purchaser to effect a considerable saving. In many of these cases we have been successful.

We give you below a list of states to which the Secretary of the Association wrote with reference to their various specifications covering disinfectants and insecticides.

Alabama, North Dakota, and Iowa have no specifications covering disinfectants or insecticides.

Ohio and Mississippi have no specifications, but at the present time Ohio is working with its State University drawing up standards. Many of their state institutions are making Pine and Coal Tar Disinfectants for their own use.

The States of California and Arizona evidently did not understand the particular questionnaire sent to them by the Secretary, but enclosed their various poison laws covering shipments of these products. They also referred to labelling of their products, but this was not the point. The State of Florida likewise did not understand. These states have been contacted again to check whether or not they have specifications.

The States of Vermont and North Carolina and the Commonwealth of Pennsylvania use the Commercial Standards throughout.

Kansas uses the Commercial Standards on Pine Oil and Coal Tar Disinfectants, but on insecticides, no mention is made of the Commercial Standards, their specifications being a 70 per cent kill in twenty-four hours, and a 98 per cent knock-down. Formula must be placed on all labels.

Wisconsin has specifications on sodium hypochlorite, but nothing on other disinfectants. On insecticides, they call for a six per cent kill over the Official Control Insecticide. Some members of the industry believe that their insecticide specifications are unfair, inasmuch as they disqualify various synthetics or synthetic combinations. No reasons for this are given by the state.

South Dakota's specifications on insecticide call for a 70 per cent kill in twenty-four hours, a 95 per cent knock-down and also mentions the minimum content of insecticidal ingredients. Other products are purchased on an analysis basis.

The State of Missouri when written was about to revise its specifications and asked for suggestions. We happened to strike them at the right time and believe they will adopt the Commercial Standards throughout covering these products.

The State of New York's insecticide specifications call for a 72 per cent kill in twenty-four hours with a knock-down of 98 per cent and a completely deodorized oil base. We have discussed the New York germicide specifications until we are blue in the face. No matter what we have tried to do, they still remain in effect. Just to review the case, let me remind you of these particular items.

They specify that all ingredients shall be USP quality. They then go on to state that it must contain cresylic acid, which is *not* USP. Now, if this product were to be made up with cresol, USP, it could not meet the stipulations that it must have a phenol coefficient of six. They too limit the soap content to six per cent, but it also must be soluble. All in all, it must be a truly unique product when compounded in strict accordance with these specifications. The Specification Board of New York State should certainly feel guilty in allowing this specification to remain in effect.

The State of Tennessee in February had specifications on insecticide which barred any pyrethrum product. Their attention was called to the Commercial Standards, but no

* Chairman, Committee on Public Purchases, report before 26th mid-year meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, June, 1939.

reply was forthcoming and this Committee is awaiting their next invitation to bid in order to check their present specifications.

Several states are in the habit of sending out invitations not stipulating the amount desired and expecting an intelligent bid. The manufacturer has no way of knowing whether he is bidding on fifty gallons or five thousand gallons.

These states, such as North Carolina and Wisconsin were approached and their only reply was that their requirements varied so much that they thought it wise to leave them out. The fact was pointed out to them that a manufacturer could not bid intelligently in this manner and that a saving would undoubtedly be made if a quantity were specified. We do not believe that we will get any satisfaction from that angle however.

The Department of Justice, Bureau of Prisons, on their Specifications No. 732 were asked by a manufacturer if a Grade AA insecticide would meet their requirements. They replied that they were not familiar with the AA spray, although we all know that they certainly have been bombarded from all angles with the Commercial Standard pamphlets covering insecticides.

The United States Navy is manufacturing its own insecticide, buying straight pyrethrum extract. The United States Marine Corps is buying pyrethrum extract on specifications that include either the odorless type or the type with regular kerosene oil. They also have specifications on Saponified Cresylic Acid Solution which are identical to the Cresylic Acid Commercial Standards.

The Regional Procurement Office, United States Treasury Department, St. Paul, Minnesota, is using the Commercial Standards, calling for a Grade AA insecticide.

Milwaukee County institutions manufacture their own insecticides and disinfectants.

The State of Maryland has specifications dated 1932 on insecticides for a minimum kill of 65 per cent, but these are rarely used. The Executive Department in Maryland was contacted with reference to the practice of brand buying. The Governor replied that the matter was up for consideration and at some future time an attempt will be made to adopt the Commercial Standards.

This brings up the matter of brand buying which we ran across with the Procurement Division, Montgomery, Alabama. Although when contacted, this Division advised they will refer to the Commercial Standards in place of brands whenever practicable. This brand buying is a vicious practice in that it excludes many manufacturers who are not acquainted with the particular brand specified and therefore, are unable to give an equal product.

The buyer is also putting himself at a disadvantage as far as cost of the material goes because of the fact that there are a limited number of bidders and the manufacturer of the brand named can usually secure the order at his own figure. This practice is obviously unfair.

The Veterans Administration has now new specifications as of April 8th this year, calling for a minimum kill of 80 per cent in twenty-four hours, when tested in accordance with the official Peet-Grady Method as required by the Commercial Standards. Undoubtedly some of you will recall that at first the Veterans had a very low kill, then boosted it to over 90 per cent and now are down to 80 per cent, which is in the high AA grade of the Commercial Standards.

The new specifications just released by the Procurement Division are as follows:—100 per cent knockdown in ten minutes, and 99 per cent adjusted kill in twenty-four hours. This is certainly a disappointment and calls for further educational work with the department.

To sum up the matter, there were many states that did not reply to our inquiry and the Committee at this time would like the members of the Association to co-operate in this measure. If the name of the state in which you reside has not been mentioned here, we would appreciate any information relative to the status of specifications covering disinfectants and insecticides in your particular state and also if in the next five months, any of the members run across specifications with which they do not agree, will you kindly drop a line to the Secretary in New York, stating your grievances against the specifications. This certainly will be appreciated and will aid us to make a complete report at a later date if it is desired by the Association.

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Disinfectants in Oil

Disinfectants were tested as to their activity against *Staphylococcus* in water, in oil and in a mixture of the two media. While phenol is a very effective disinfectant in an aqueous medium, it practically loses its disinfectant action in oil or in an oil-water mixture. Resorcinol is less efficient in water than phenol, but is an effective disinfectant in an oil-water mixture even though it loses its activity in oil alone. Peanut oil was used in these tests. Phenol is much more effective in mineral oil (vaseline), than in oils of vegetable origin. Th. Sabalitschka and Annemarie Priem. *Fette und Seifen* **46,** 277-81 (1939).

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Diphenylamine for Screw Worms

An effective and economical way to protect livestock from screw worms has been developed by the Bureau of Entomology and Plant Quarantine, according to the U. S. Department of Agriculture. The new treatment consists in applying finely ground diphenylamine to any break in the skin of cattle, sheep, horses, or hogs that may be exposed to screw worm flies.

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Liquid Soap

A liquid soap is composed of palm-oil soap 20 grams, ammonium sulforicinate 10 and terpenolene 5 grams per liter of water. Louis Roussy. French Patent No. 833,932.

Maple Floor Maintenance

By E. C. Singler*

Secretary, Maple Flooring Mfrs. Assn.

KNOWING the increasing interest in the production, distribution, and use of floor finishes, a discussion of good floor construction and related problems which have a bearing on better performance of the floor finish is appropriate at this time. For 25 years, the Maple Flooring Manufacturers' Association has operated under established standard grade-marking of flooring, and for a number of years past grade and species marking on flooring bundles has been a requirement of membership. Through contacts of field men with architects and others, we have found that while they had great faith in the enduring and other good qualities of hard maple floors, a job was sometimes lost to maple solely because of dissatisfaction or skepticism in the matter of the finish.

It has been the splendid virtues of hard maple flooring which helped create the finish problem. Its known density and hardness brought it into general favor and use on all types of jobs, many of which were given no finish of any kind. And because of hard maple's remarkable wearing qualities, the matter of a suitable finish was too often neglected. It is true there were finishes developed to beautify and protect maple floors under light conditions of service, and still other finishes such as preservatives to help protect floors against unusual and unfavorable conditions, but our maple floors were going into the types of buildings where as a rule there were no conditions unfavorable to the life of the floor, excepting the easily-met condition of heavy traffic. And our problem was to encourage development of a type of finish which would best withstand this heavy traffic and keep the floor in good appearance and at the same time reduce cleaning and finish maintenance costs.

We had been engaged in more or less cooperative advertising for over 15 years when our group almost as a whole came to the conviction that we must do something about this matter of encouraging production and stimulating use of a heavy duty type finish. That was about 10 years ago when our product as now was going largely into schools, stores, institutional and public, office and other commercial and industrial type buildings. There were several of these floor seal type finishes then being marketed which we investigated and found had real merit for performance. Undoubtedly because of the success of these and our solicitation of paint and varnish manufacturers to study this problem with a view to developing suitable finishes, it was only a matter of a year or two before a number of proprietary products of this type finish were being marketed.

To acquaint the maple flooring user and prospect with this wear-resistant type finish, we at once put out a little folder featuring it and describing among other things the prime requirements of a good service finish and listing the finishes of that character we had approved. These folders were given broad distribution through our members, in our mailings of other literature, in correspondence, in contacts of our field men, etc. From time to time the folder was reprinted with additional listings of approved finishes. I expect this has had something to do in increasing calls on us from floor finish manufacturers' representatives and in stimulating the marketing of these finishes, because the time we found it necessary to devote to these conversations and correspondence was increasing right along.

About this time Dr. Snell of Foster D. Snell, Inc., consulting chemists, happened along and we decided that the matter had progressed to a stage where it would be advisable to adopt a standard specification. It would save time and expedite our approval of heavy duty finishes. This was also in the floor finish manufacturers' interest and partly so, because delay incident to time lost in our checking up on performance of a finish without merit could prove detrimental to the interests of the other manufacturers. If a finish did not meet the standard specification, no further time need be lost on it. The first standard specification covering a heavy duty finish for maple, beech and birch floors was adopted October 8, 1936, and was made effective for two years from January 1, 1937. A revised and strengthened standard specification was adopted October 31, 1938, and made effective for two years from January 1, 1939. In each instance copies of the specification together with a memorandum letter from the Association on procedure to follow were drawn and distributed to floor finish manufacturers of interest, were publicized and made available to anyone on request. Included with the current standard specification on heavy duty finishes is a specification for finishes on gymnasium floors of maple. Inasmuch as these "gym finishes," while tough and quite wear-resisting, do leave an appreciable

* Address before 26th mid-year meeting, Natl. Assn. of Insecticides and Disinfectants Mfrs., New York, June, 1939.

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film on the surface, we approve them for gymnasiums only where the general public is not admitted.

We are, of course, confining this whole recommendation to the type of floors subjected to heavy service. It has no application to the average residential floor, although we feel that in the case of maple a heavy duty type finish should prove more satisfactory than other types where the owner is not disposed to keep up the finish well. This is particularly true where the maple floor is given a color finish. And hard maple can be very successfully color-stained where acid (water soluble) stains are used. These stains can be highly transparent and, while developed with an application of lacquer, they should be protected with a highly wear-resistant material, at least one that is not susceptible to easy marring, scratching or flaking off.

This leads us to the matter of better application for improved performance of a heavy duty finish. I have no doubt that those of you who are marketing these finishes have at some time or other encountered a job, possibly where your own finish was used, where the result was not satisfactory and it was clearly evident to you that the fault was in application. If the manufacturer's instructions for application had been strictly followed, the surface condition of the finish should not have had the tendency to tackiness which attracts and holds dirt. We urge the cooperation of all the manufacturers of these finishes in contacting as often as they reasonably can the jobs where their finishes are used, to see to their proper application beforehand and to determine if the floor is in proper condition for the finish. We know that some of the manufacturers go to the extent of servicing the job by at least giving it supervision and it is a practice which is bound to pay dividends.

Your salesmen will find old maple floors time and again which are in no condition to receive properly a heavy duty finish without first giving it a smooth sanding. Even buffing in the finish with electrically driven steel wool equipment will not turn the trick, because the floors through long neglect and abuse require the uncovering of new wood to bring out the smooth surface essential for a real finish job. In other instances it is just a case of scrubbing out dirt and perhaps an old oil finish with soap and water, allowing the floor to dry thoroughly before it is scrubbed the second time and before the finish is applied. Of course, buffing in the finish with steel wool is always helpful and there is nothing like good equipment for this purpose. And the importance of a very smooth "finish sanding" to best results with the floor finish job, cannot be over emphasized. Hard maple is the hardest wood in general use for flooring and experience with it for over 50 years has amply demonstrated that it will withstand the abuse of scrubbing as well as better than most commonly used flooring materials. But repeated scrubbings are in the long run harmful to the wood in that it develops innumerable minute fissures or checks in the surface which naturally fill up with soil and that means accentuating the cleaning process. It also, as you know, raises the grain and this fuzzing of the grain is worn or dusted off under abrasive action of foot traffic and trucking.

Furthermore, a good floor should be kept reasonably dry. In the case of a wood floor, recurring periods of dampness and dryness with resulting swelling and shrinking of the flooring strip, cause what is known as "compression set" which eventually results in the development of open joints in the floor. These cracks between the strips are frequently the result of repeated scrubbings year in and year out. The condition is apt to prove more serious where there is little or no air circulation under the floor due to the sealed in dampness causing incipient decay and eventual dry rot on the underside of the flooring. Good floor construction requires, therefore, that in the case of ground or below-grade concrete slabs that the strip wood flooring have ample air space under it or the sub-floor and that the air circulation be augmented by the use of an occasional ventilator or duct placed in the base of the floor at wall ends or by keeping the expansion joint at side walls open. These expansion joints can be covered with an angle iron or base shoe just clearing the edge of the floor field.

In case of maple blocks embedded in mastic, the ground concrete slab should be first membrane waterproofed. Moisture enters fastest at the ends of the flooring strip or block and, in fact, the directional permeability of seasoned woods to water as shown under test gives a heavy ratio for longitudinal as compared to radial (edge grain) and tangential (flat grain). It is particularly because of this susceptibility of end-grain in wood to moisture that we hope some day to see an impregnation material that will completely block moisture absorption in our flooring. In other words, completely stabilize it for dimension. Some of these heavy duty finishes have fair efficiency in retarding moisture. As a general rule, though, they reach only the side of the flooring strip that is least susceptible to moisture absorption and what is needed is a moisture repellent that is about 100 per cent efficient and in which it will be practicable to immerse the wood. I believe progress is now being made in that direction and when the objective has been reached, your heavy duty finishes should give even better results.

Now as to market possibilities. I should like to point out that while we know of no survey, on which we could base a close estimate of the hard maple floors in existence throughout these United States or of any species of wood floor for that matter, our industry has been in existence for over 50 years and we have had evidence that some of the original maple flooring produced by the first flooring matchers is still in use. For many years the Association members alone produced over 150 mil-

MORE "STRAIGHT-FROM-THE-SHOULDER" FACTS ABOUT FLOOR WAXES

How durable is a floor wax? Most people judge the durability of a floor wax by the length of service it gives . . . from the time of application until the wax wears down to the floor, particularly in lanes of traffic.

As a yardstick for durability, that's pretty good . . . until complicated by other factors. For example, several wax manufacturers have gone to great lengths to make their waxes non-slippery. Unfortunately, several such extremely non-skid waxes are inclined to be sticky and tacky. As a result, dirt is quickly ground in and the floor soon becomes an unsightly mess.

Obviously, time for retreatment with such waxes is not determined simply by their wearing out . . . but more likely by the appearance of the floor. Our yardstick for durability must be adjusted accordingly.

Here is another splendid example of what happens when undue emphasis is put upon one particular property of a floor wax. True, a wax that is 100% non-slippery has a feature that will attract the attention and impress many buyers. Most of them, sad to say, fail to consider the sacrifice that has been made in durability and even in appearance. But will these customers re-order when they get the *whole* story through actual experience?

All-Around Performance Essential

To build a healthy repeat business, a floor wax must give all-around satisfaction . . . in durability, appearance, waterproofness and non-skid characteristics. That is the background upon which Candy's Bright Beauty Wax has been developed.

On the floor, Bright Beauty rivals in appearance those waxes that have made a fetish of gloss or lustre. In fact, as we have said repeatedly: just put Bright Beauty on a prospect's floor . . . alongside a wax that has already proven "eminently satisfactory" . . . and you've practically got an order.

But appearance isn't everything. Candy's Bright Beauty is reasonably waterproof. It will not "milk" in wet weather, withstands damp mopping, yet can readily be removed when it's time to apply a new treatment. Nor is Candy's Bright Beauty *excessively* slippery. To be actually *non-skid*, a wax would have to be so soft and sticky it would be impractical for use as a floor finish. The happy medium is a wax that creates no difficulties in walking for the average person.

Sold Through Distributors Only

Bright Beauty Wax is sold through distributors *only** . . . never direct to the consuming trade. It is our unalterable policy never to compete with our jobbers. Packed in attractive containers under your own label. Competitively priced to allow you your usual mark-up.

Try Bright Beauty Waxes under your own most rigid tests! Write for FREE experimental sample. No obligation.

**Except for experimental accounts in Chicago, essential to research.*

Al Candy, Jr.

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Manufacturers of Prepared Paste Wax, Spirit Liquid Prepared Waxes, Powdered Dance Floor Wax, Concentrated Cream Furniture Polish, Paste Cleaners, Rug Shampoo.

lion feet of flooring annually and this means at a conservative estimate that over 200 million feet were produced most years prior to about the year 1929. A great many of the floors laid from this production must still be in existence and giving service in schools, stores, offices, hospitals, libraries, recreational buildings and industrial buildings of all types.

Here is a vast market for young men to develop in better finished and maintained floors. We do not except industrial buildings, because we believe it has been demonstrated in those industrial establishments that have given attention to their floors that a favorable reaction has followed on the part of their employees. Employees appreciate and respond to cleaner and more cheerful surroundings. All this means stepping up efficiency and it means more, too, in adding longer life to the floor. This is especially true where there is considerable trucking over the floors. Where the finish lies in the surface as does your heavy duty finish, binding and hardening the surface fibers, there is more resistance to feathering and possible shelling and splintering of the grain under heavy trucking load.

People are paying more attention to their floors and we see no reason why management of industrial establishments cannot be induced to do so. As in the school, institutional and public building field, the initial time required to sell such a prospect would be well repaid for. A fair proportion of our advertising has been and is reaching the commercial and industrial field and in all of this advertising we call attention to the use need of suitable type finishes (heavy duty finishes) developed for our product in such floors. The textile field alone offers a very big market, because you will find most of these plants floored with Northern hard maple and they require a pretty high standard of floor maintenance.

We know through our advertising that certain organizations have gotten after this industrial business and that the present day suitable type finish was the determining factor in using hard maple flooring in a number of instances. Now for a number of years past our space advertising and our literature has prominently carried our offer to assist inquirers with their flooring problems. Our services are gladly given to the many requests we receive of this nature. Some of them take considerable time, because occasionally there are problems which our experience and the known experience of others in this field do not cover, when we set about to determine a solution through means at our disposal. This service is made generally available to architects, contractors, builders and building owners. We want you and other floor finish manufacturers to feel free in writing us about floor problems or related matters you encounter in your trade promotion work, particularly where you feel convinced that in the method of floor construction the lack of proper safeguards for the finish floor are going to adversely affect satisfactory floor appearance and performance of your floor finishes. Perhaps a suggestion or two coming from us to the architect or building owner in such instances will prove helpful.

In conclusion, I want to emphasize our belief that the rehabilitation or reclaiming of old maple floors with a properly applied heavy duty finish after re-sanding or scrubbing as required, offers you a vast market that can be developed progressively each year as further advance is being better made with new construction.

Emulsifying Composition

An emulsifying composition for bituminous substances comprises a mixture of soaps of saturated and unsaturated fatty acids and of resin acids or resin oils. It may be obtained by simultaneous saponification of stearin, animal tallow, and resin or resin oils. Soc. chimique et routiere de la gironde. French Patent No. 833,170.

Hard Wax Compositions

Hard wax compositions contain one or more natural or artificial waxes and one or more alcoholates of an alkali metal, an alkaline earth metal, magnesium aluminum or zinc, derived from aliphatic or fatty aromatic compounds containing an alcohol group and having at least 6 carbon atoms in the molecule. The alcoholates may be used for hardening candles and in the manufacture of polishing waxes and shoe creams and polishes. Deutsche Hydrierwerke A.-G. British Patent No. 493,766.

Emulsifying Agent

Saturated or unsaturated fatty alcohols containing two hydroxy groups and at least ten carbon atoms are treated with sufficient sulfonating agent to esterify one hydroxy group and then with a phosphatizing agent to esterify the other hydroxy group. The product may be partly or wholly neutralized. Thus, castor oil fatty alcohol is treated with sulfuric acid, then with phosphoric acid and the mixed ester neutralized with sodium hydroxide. Oranienburger chem. Fabrik A.-G. German Patent No. 664,514.

Hyacinth Perfume

A pleasant floral note can be given to soap by using a hyacinth odor, which can be made quite lasting, according to the following formula:

	Parts
Cinnamic alcohol	30
Residue from the preparation of cinnamic alcohol	10
Purified gum styrax	10
Synthetic narcissus	5
Eugenol or clove	2
Synthetic soap neroli	10
Synthetic soap jasmine	10
Phenylacetic aldehyde	3
Bromostyrene	13
Residue from distillation of hydroxycitronellal	5
Musc xylene	2

Phenylacetic aldehyde helps greatly in bringing out the hyacinth note but is too expensive to be used in large proportions in soap perfume, so is included only to the extent of 3 per cent. L. M. Labaune. *Revue des Marques Parfums de France* **17,** 117-18 (1939).

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PYRESSENOL ODORLESS No. 20

For those who prefer to purchase the above combination (three parts Pyrethrum Concentrate No. 20 Odorless and two parts Neutressenol) ready for dilution. Price on request.

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A combination concentrate embodying in scientifically correct proportions the quick paralytic action of Pyrethrum and the leg paralysis and moribund kill of Dihydrorotenone, both enhanced by the activative penetration of Essenol. Used at 1 to 19 dilution, Rotopyressenol gives a Grade B+ insecticide having added effectiveness against crawling insects and a high moribund kill. (See Treasury Dept. Spec. No. 311). Price on request.

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ESTABLISHED IN 1798

Floor Wax Testing

By Melvin Fuld*

Fuld Brothers

IT HAS been said that floor waxes should be purchased on the basis of their performance regardless of their formulation. This, of course, may prove to be disastrous because performance is not the only essential. One must have performance with safety. It has also been suggested that purchasers and purchasing agents should set up definite standards of quality in the form of a specification or a system of comparative valuation by performance. Unfortunately at this particular time the only standards which could be set up would be visual standards of comparative value of the most important factors in self polishing waxes. There are chemical tests which will assure the purchaser that his floor will not be injured, but when it comes to practical things such as wear, appearance and slip-hazard, these standards do not exist today.

Before any such system of testing can be set up, two testing tools must be developed. These are—1—A uniform testing surface.2—A controlled method of applying the wax to the testing surface.

In preparing this paper, it was decided first to list all of the properties that might be considered in the investigation of self polishing waxes. These were grouped in two classes. *First* the material itself from both a physical and chemical standpoint; and *second* the resultant film, from the physical and chemical standpoint. The lists given below are probably by no means complete, but they serve as a definite starting point for testing work.

Complete Properties for Consideration in the Investigation of Self Polishing Waxes

A. The Material
- 1. Physical Characteristics
  - Color and odor
  - Drying time
  - Spread — evenly, smoothly, no streaking, no highlighting, leveling, creep
  - Viscosity
  - Ease of application—labor required, special skill, technique, equipment
  - Coverage
  - Absorption
  - Number of coats necessary
  - Universality of use
    - Surfaces
  - Stability — thickening, jelling, separation, homogeneity
  - Jell time
  - Economy in use
  - Specific gravity
  - Contamination — dirt — foreign material
- 2. Chemical Characteristics
  - Surface tension
  - Constitution — detrimental to floor, volatile solvents, free, oil, acids, alkalis, copper, manganese, rosin, alkaline salts, excess of dyes and perfumes, coal-tar distillates, Storch-Lieberman positive
  - Container attack
  - Toxicity, causticity, irritability, inflammability
  - Stability
    - Freezing
    - Heat
    - Dilution properties

B. The Film
- 1. Physical
  - Softening temperature
  - Structure
    - Continuous film, particle size, porosity, uniformity
  - Coefficient of friction
    - Hazardous—increases or decreases
  - Wear
    - Abrasive
    - Frictional
  - Smoothness
  - Hardness
  - Tackiness
  - Toughness and brittleness
  - Thickness of film
  - Adhesion to floor
    - Peeling
    - Adhesion and absorption of soil
  - Appearance
    - Discoloration and staining of floor
    - Opacity and clarity, transparency
    - Color
    - Degree of color depth imparted
    - Streaking
    - Blushing
    - Highlighting
    - Cracking and crazing alligatoring
    - Blistering
    - Water marring—salt water, etc.
    - Scratching and powdering, chalking
    - Tracking
    - Lustre
      - a. First coat
      - b. Maximum
      - c. Average
    - Lap marks
  - Ease of removal and washoff
    - With neutral soaps
    - With alkalis
  - Maintenance
    - Ease of polishing
    - Ease of cleaning
  - Preservation of surface covered
  - Traffic resistance
  - Flexibility of film
  - Imprint resistance
  - Effect of moisture
  - Texture
  - Effect of ultra-violet light

B. The Film
- 2. Chemical
  - a. Constitution of Film
    - 1. Quantity and composition of wax
      - Color, purity, melting point, saponification number, iodine number
    - 2. Quantity and composition of resin
      - Storch-Lieberman negative
      - Water stability
      - Effect on floor
      - Softening point
      - Chemical inertness
      - Brittleness, tackiness, hardness
      - Solubility characteristics
    - 3. Quantity and composition of emulsifying agen
      - Melting point, re-emulsifiable character, effect of floor, water solubility

* Report Sanitary Specialties Committee before 26th annual mid-year meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, June, 1939.

HERE ARE THE FACTS

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Dihydrolin prevents a high percentage of flies, mosquitoes and bedbugs that appear dead when first knocked down, from becoming normal within a few hours.

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Dihydrolin will make a Grade B spray and reduce your Pyrethrum Market Hazards 70% and save you money at the same time. Example:

Dihydrolin	**1½ Gal.**
Pyrethrum No. 20 Ex.	**1½ Gal.**
Kerosene	**97 Gal.**

When Pyrethrum No. 20 Extract alone is used 5 gallons in 95 gallons of kerosene is necessary to make a Grade B spray.

* Insecticidal properties of Dihydrorotenone. *W. N. Sullivan, L. D. Goodhue and H. L. Haller, Bureau of Entomology and Plant Quarantine, U. S. D. A. . . . Soap and Sanitary Chemicals, July 1939.*

Safety of Dihydrorotenone to humans. *Dr. H. P. Haag, Medical College of Virginia . . . Soap and Sanitary Chemicals: January 1937.*

Stability of Dihydrorotenone. *Howard A. Jones, Et Al, Bureau of Chemistry and Soils...F. L. Campbell, Et Al, Bureau of Entomology, U. S. D. A. . . . Journal of Economic Entomology, Vol. 26, April 1933.*

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4. Adulterants and fillers, dyes, perfumes
   Objectionable materials
   Limits of dyes and perfumes
5. Ash content
6. Odor

b. Chemical inertness and stability
   Climate and humidity, temperature, oxidation, light, etc.
   Re-emulsification
   Resistance to soap solutions
   Solubility
     by alkalis and volatile solvents
   Water resistance
     Cold water
     Spotting
     Washoff

Lack of Test Methods

FOR the practical evaluation of a floor finish it is fortunately not necessary to examine the product for each and every one of these properties. A few are more or less obvious and require no tests; others are interrelated and their practical significance may be determined collectively by a comparatively few practical tests. Thus, for example, lustre indicates something of formulation and processing, viscosity, transparency, flaking, blushing, crazing, whitening, structure of film, particle size, adhesion to the surface, etc.

The essentials may be summarized as (1) damage to floor covering as by alkali, solvents, oils, and staining; (2) lustre and general appearance as leveling, transparency, and adhesion; (3) water marring and washability; (4) wear; (5) slipperiness; (6) applicability to various floor surfaces; (7) ease of application and drying time; (8) maintenance and removal; (9) odor, toxicity and inflammability.

Numerous methods have been evolved by large users and testing laboratories for the determination of these properties. Those of chemical or physico-chemical nature are in rather close agreement and are for the most part quite satisfactory. Thus, for damage to floor covering we have the following: free caustic alkali and alkaline salts (PW151); volatile solvents (PW151); ash content (PW-151); copper and manganese (RMA '36-'37) rosin, pontianak and ester gum (RMA '36); free oil (RMA '36).

Those properties of very practical nature, many of which for adequate investigation require special apparatus are sadly lacking in reliability and completeness and with but few exceptions depend upon the visual observation and the interpretation of the operator. Aside from lack of accuracy, desired duplication for the most part is impossible and the results unfortunately cannot be expressed numerically in significant units which requirement is vitally essential.

Those properties for which testing procedure is most inadequate or unsatisfactory are gloss and general appearance in regard to streaking and highlighting; wear, washability, coefficient of friction, removal of old coatings; brittleness which is indicative of powdering, cracking, crazing, etc.; acceptance of soil, ease of application, cleansing and polishing; odor, coverage and adhesion.

Sampling and Causes of Error

INASMUCH as the majority of wax emulsions of the self-polishing type are comparatively good dispersions, error due to improper sampling is in most instances not of major significance except for the determination of foreign matter, which settles to the bottom, or oils, solvents, unemulsified wax and the like which separate at the surface. In testing for such materials or when thickening or improper dispersion are suspected, the test sample should be taken immediately following thorough agitation of the material. A portion of this sample should be transferred to a bottle or tube loosely corked and allowed to remain undisturbed at room temperature for 48 hours for observation.

Many of the significant tests of self-polishing waxes concern appearance and various other properties of the resultant film. The preparation of the film on a test panel and the surface on which the film is tested are without doubt the most faulty and unscientific operations involved in the examination and evaluation of such products. It is the lack of uniformity and control in these respects that is largely responsible for the wide disagreement and the discrepancies which often occur in tests run even by a single operator.

It is obviously ridiculous to attempt to determine the relative wear resistance of a polish at solids of 13 per cent and 15 per cent respectively, or comparative lustre, which let us say depends on the difference in the thickness of film produced, when the most careful manual technique frequently results in the application of 200 per cent as much material per unit area, on one panel as on other.

The preparation of a satisfactory test sample encompasses not only the problem of applying a definite quantity of the material to a unit area but also the uniformity of the spread. Spreads laid with small cloth pads, or applicators under the most ideal conditions frequently exhibit streaks and areas of uneven thickness. This unevenness introduces tremendous error in such tests as wear, and renders the spread quite useless for the examination of surface tension characteristics as leveling, high-lighting and creep.

The application of the spread for various tests resolves itself into methods for producing several different types of films. (1) Where it is desirable to control the thickness of film regardless of the solid content and consistency of the material; (2) the application of a definite quantity of the material to a unit area; and (3) the application in uniform manner regardless of the thickness of film or quantity applied.

Doctor blades which find some application in the paint and varnish industry and devices employing the same principle are quite unsatisfactory for applying emulsion wax polishes in two outstanding particulars. Viscosity is so low that the distance between blade and surface approaches

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zero. The adjustment of the blade consequently becomes extremely critical. Under these conditions it is impossible to find a surface sufficiently exact and the overall error makes such technique impractical.

Another method is the flow or "flood and drain" system. The test panel is either flooded completely or immersed in the liquid, then quickly placed in a vertical or nearly vertical position and allowed to drain and dry. Here one desirable requirement is satisfied, namely application in identical manner. Thickness of film may be controlled to a fair degree by adjusting the viscosity or solids. The quantity applied (of the same material to the same surface) is the same within reasonable limits and average film thickness may be calculated with fair accuracy. The principal fault lies in the fact that the film thickness varies by uniform gradient from a minimum at the top to maximum at bottom.

Walker and Thompson, Process A. S. T. M. 22 II 465 (1922) is a process designed for preparation of varnish and paint films. The apparatus consists of a turntable, carrying the test panel, mounted on a spindle which is rotated by an electric motor to spread the film. The method does not allow much control of film thickness and there is a tendency, especially with viscous materials, to form a film of less thickness at the periphery than at the center.

The method which seems to be most generally satisfactory is a spray method originally devised by H. G. Arlt of Bell Laboratories and described in the *Laboratory Record* XIV 216 (1936). A high pressure spray gun is mounted on a motor driven carriage which travels past the panels to be coated. The spray is adjusted to a width about twice that of the panels. The thickness of film is controlled both by the speed of the carriage and the volume of the spray. Control of thickness of film is possible within limits of 0.0001". A modification of the method consists of mounting the spray gun to a stationary support at the correct distance from an endless chain or belt moving in a level plane upon which the panels are placed. The speed of the belt is varied as a control of the material applied. As the spread is of excellent uniformity it is possible to calculate accurately the actual thickness of the film.

Surface Characteristics

THE proper surface upon which to prepare the film is another essential consideration. The selected surface should be consistently uniform. It is most desirably a perfectly flat plane. Suitable surface structure as regards smoothness and porosity are of the utmost importance. It must be chemically inert to polishes and not detrimentally affected by water. Average moisture content and effect of temperature and humidity must be favorable. It is decidedly essential that its resiliency and hardness lie within suitable limits and it is an asset if its relation to the film approximates that of representative floor coverings themselves. Metallic surfaces when otherwise applicable lend themselves to the use of electrical testing equipment.

Probably the most commonly used test panel is a small section of some standard flooring material such as linoleum or rubber. Though it seems a logical material, it is actually one of the poorest. The characteristics of linoleums are so widely different that it is quite impossible to draw any significant conclusions on even the most fundamental characteristics of wax films except possibly rough comparisons between waxes tested on panels of the same material. Some floor coatings, when new, are paraffined and quite impervious to water, some are porous. Used panels have a very rough, dry and porous surface. The film formed on the first mentioned is almost entirely a surface film while with the latter practically all is absorbed and only very little surface coating exists. Furthermore, the degree of resiliency, moisture content, and color often vary, introducing further possibilities of error.

Glass and tin plates have many advantages such as uniformity even after repeated tests, satisfactory chemical inertness and freedom from the effect of water or varying moisture content. They are also readily acquired, inexpensive and may be duplicated within practical limits at any time. Unfortunately they lack the necessary porosity to allow satisfactory application. Waxes producing hard films as a rule check, crack and peel, oftentimes spontaneously with drying.

Panels of heavy paper have been used, but with questionable success. Very few papers have satisfactory smoothness and surface texture and these in the uncoated types are decidedly affected by wetting. Oiled and waxed papers have the same disadvantages as glass and tin plate in that it is difficult to obtain a satisfactory spread of the liquid and the dried film is prone to crack and peel. More satisfactory results were obtained by the use of a finished cardboard stock of smooth surface treated before use with two coats of a thin colorless cellulose lacquer. A comparatively satisfactory surface resulted and good application was possible, but the smoothness of the surface was unsatisfactory and it is impractical to use such panels for more than a single test.

Bakelite paper or formica sheet about 1/16" thick which is not expensive and offers close tolerance of surface texture is fairly satisfactory. Porosity is sufficient, yet limits absorption to a minimum. It is not affected by water and withstands numerous cleansings with mild alkalis or solvents. Its physical relation to the wax film in most respects parallels that of a high grade linoleum. It is also possible to clean the panels for retest.

Metallic test panels to be used with automatic electrical testing equipment were found quite satisfactory when prepared from sheet tin with the application of chrome plate. These are characterized by a surface sufficiently porous for uniform and

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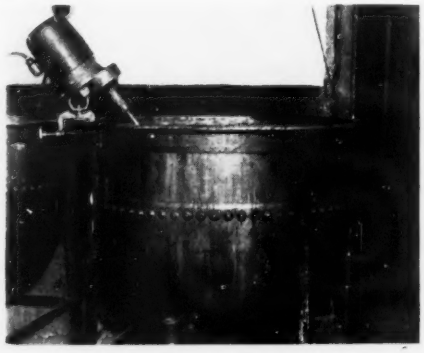

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convenient application, may be thoroughly cleaned with ease and very little absorption occurs. With reasonable care the surface remains uniform and duplications of a high degree of reliability result. The highly polished metallic surface makes it inadvisable to use this type panel, however, for gloss tests and the visual examination of film characteristics.

The humidity of the laboratory itself has a very direct effect on drying time, and such properties as water resistance, film hardness and coefficient of friction of the film particularly when tests are run soon after the primary drying of the spread. Temperature plays its part in the rate of drying and the physical character of the film. The air should be free from dust; direct sunlight occasionally results in abnormal characteristics; forced drying for the most part is to be avoided and adequate lighting is essential.

Much is to be said in favor of the use of mechanical, particularly automatic mechanical testing devices, which require nothing but simple routine, rather than the interpretation of the operator. "Is a film slippery or non-skid, or to what degree," means little in contrast to an accurate mechanical determination of the coefficient of friction. Relative gloss becomes infinitely more significant when expressed numerically in exact per cent of the quantity of light reflected.

Gloss

THE gloss of a surface is defined as its ability to reflect light regularly. Pfund (*J. Optical Soc. Am.* 20, 23-6, 1930) differentiates between objective gloss, or true gloss, and subjective gloss. Objective gloss is independent of the color or shade of the surface and depends entirely on its physical perfection. Diffusion, however, introduces optical illusion. Inasmuch as dark surfaces absorb most of the light falling upon them, little diffuse deflection occurs and on such surfaces visual observations closely parallel true gloss. On light surfaces, however, more of the light is diffused so that gloss although perhaps high objectively will be low visually and subjectively. The same coating applied to surfaces identical except for color may appear very glossy on the dark surfaces and only moderately glossy on the light ones.

Many instruments are available for measuring gloss. They consist usually of a light source directed upon the surface in controlled manner with facilities for measuring the reflected light, the diffused light or their difference. The Hunter Visual Glossmeter, the Pfaltz & Bauer Glossmeter, the Pfund Glossimeter, and others measure the light regularly reflected independent of diffused light. The two latter instruments can also serve to measure diffused light. The Ingersol Glarimeter is an instrument directing the reflected light into a polariscope which measures regular reflection and diffusion and so indicates subjective gloss. Other devices such as the Sward-Levy gloss comparator, the Detroit Club method and the Hunter Gloss Comparator measure gloss by the image sharpness principle, a sharply reflected image indicating objective gloss and a distorted image indicating subjective gloss.

A method which requires but little equipment, which is not a measure of gloss but an indication of the properties of a film which characterize gloss, is the measure of the transparency of the film. Two small microscope slides are placed side by side in a holder on a blackened metallic hood through which is cut a narrow slit for viewing a portion of each slide. Light is transmitted through the slides from two tubes. The tube through which the light passes to the uncoated slide is equipped with a shutter adjusted so that both slides are perfectly matched. A graduated scale on the shutter indicates the per cent of light transmitted to the uncoated slide to match the coated one, which is a measure of the transparency of the coating. The presence of dirt or foreign materials will affect the reading just as will poor lustre. Inasmuch as foreign materials are also undesirable in a floor coating, determination by this method is of decided practical value.

Photo electric equipment for the determination of gloss has proved satisfactory also for the determination of unevenness of spread. These properties are directly represented in the percentage difference between minimum and maximum readings of gloss. Obviously a film applied with perfect uniformity to a uniform test surface can exhibit lack of uniformity with consequent variation in lustre only because of improper leveling or creep.

Friction

COEFFICIENT of friction is defined as the ratio of the force required to move one surface over another to the force pressing the surfaces together. The equipment necessary to measure the relation of these two forces must be designed to meet conditions similar to those encountered in practice. Various principles may be employed such as the inclined plane, the kinetic ejection principle, horizontal force applied to one surface or definite mass to produce motion on the other surface and the oblique thrust method. The simplest of these is the inclined plane, but in practical testing there are several limitations. The method cannot be used on the floor itself, but is restricted to the laboratory. Where the movable surface is released from a static condition errors result from the effect of inertia in starting. When the movable surface is in motion at the start of the test duplication of results is difficult. If the incline of the plane is constant, the results do not show degree of friction but only a comparison with the constant. Where the angle of incline is adjustable, too large a number of tests is required.

The ejection principle and the principle of application of a measured force also involve practical and serious objections.

These difficulties led to the design and construction of the oblique thrust apparatus for determining coefficient of friction described in the

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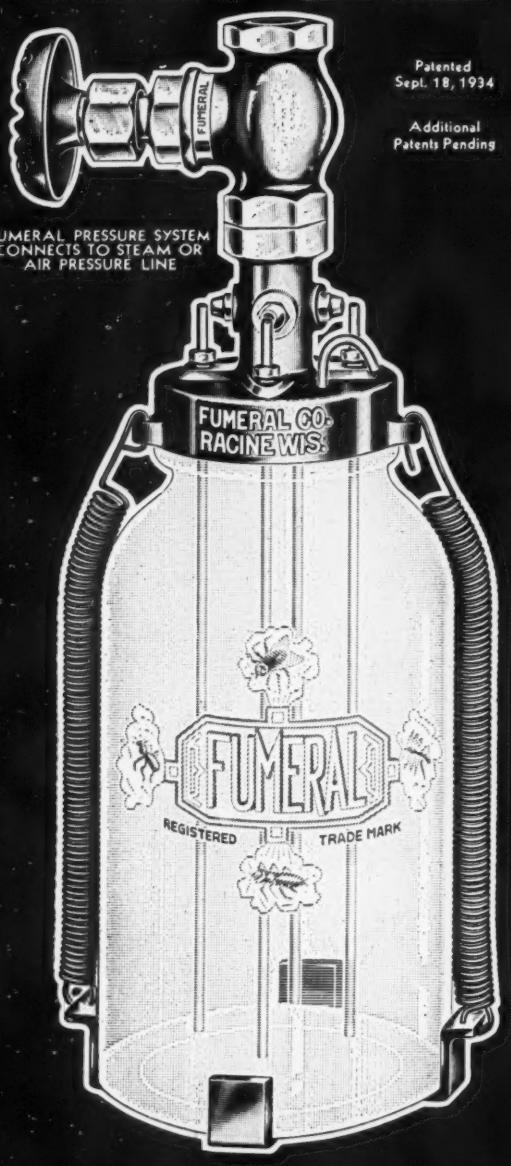

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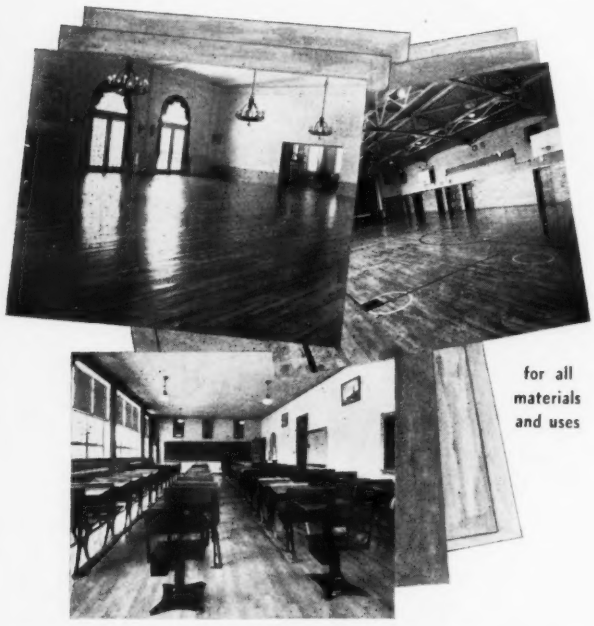

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author's article "Floor Wax Testing" (SOAP XV 95 Jan., 1939). Friction is determined in relation to a chrome plated metal surface which gives results slightly lower than with dry leather but without the possible error arising from non-uniformity of a leather surface. The area of contact and the weight applying the force simulate the weight of an average person and the surface of a shoe in contact with the floor.

Temperature and humidity have been shown to have a definite effect on slip, making it necessary to test waxes under similar conditions of temperature and humidity to obtain duplicate results. Under such uniform conditions it was also found that different linoleums gave different results for the same wax films, and that the lustre gets better and the slip goes down depending on the texture of the linoleum.

Doctor Gustav Gehm, of the Department of Household Economics of the German Nazi Party, in their handbook, "Neure Arbeiten," 1938, describes a slip machine in principle essentially the same as the one described by the writer. Gehm's work confirms the work of our laboratory in regard to humidity and temperature effect on both gloss and slip. He likewise points out:

"Slipping of the foot on the surface happens when the angle between the leg and the surface goes over certain grades. The more slippery the surface, the higher the grade of the angle at the moment of slip. The larger the grade of the angle the more steep the leg at the moment of slip, or in other words, the more slippery is the surface. The smaller the angle the more slip-proof is the wax. Usually, when the foot slips, the grade of the angle is between 40 and 70 degrees, depending on the wax. In other words, you can get the grade of the slip-proofness of a wax by using this angle."

He describes his apparatus as being built like a human being, the leg having at its end a shoe with a sole moving over the floor.

"On a strong wooden block is fastened a hard wood board and a vertical iron pipe. Over this pipe is a movable pipe connected by means of a joint (hip joint) to the leg. This leg again is connected by means of a joint (the ankle) with the shoe. The connection of the shoe with the sole is given by rubbing with sandpaper with which the shoe is equipped. By this medium we are successful in keeping the sole to the shoe and still able to change the leather sole very easily. For every test we use new soles or the used ones cleaned thoroughly. On the hard wood board runs a little sled made heavy by a block of lead. By means of the reel the sled can be moved forward and the grade of the angle made smaller. To read the grade of the angle there is a graduated wheel affixed to the sled which turns alongside the baseboard on a strip gear. At the moment of slipping, the graduated wheel is lifted up by a lever. On a scale marked off in degrees, you can read the slip angle but it is also possible to determine this angle without using this scale. A rope, which holds two weights of two kilos, which is supposed to represent the human weight, runs from the hip over a roller on the top end of the iron pipe to the foot lever. By pushing this foot lever the weights and foot are lifted so that the sled and the leg can be put into position for the test."

Wear

IN addition to the normal friction between a leather sole and the dry wax coating, the testing of wear must also take into consideration such factors as temperature and humidity, resilience of floor covering, presence of dust particles, gritty matter, grease, etc. Abrasion resistance alone is an insufficient measure of wearing ability since soft tacky films are to a degree displaced rather than removed with a consequence that inaccurate high values result. Pure frictional wear on the other hand yields low values with such soft coatings but does not necessarily take into account the resistance of hard films to abrasive wear.

The Gardner Abrasion Test Apparatus and a reciprocating motion machine described in the former article in combination yield a workable basis for the evaluation of wear durability. A combination test is obtained with the reciprocating motion machine by the use of an abrasive material such as finely divided silica or steel wool pad, thereby bringing into play both frictional and abrasive wear. This equipment also lends itself to electrical determination of film failure by the use of the steel wool pad and suitable metallic test panel which is decidedly more accurate than visual observations.

Hardness

HARDNESS, with its related qualities of brittleness and toughness, is of tremendous practical significance and is a property which is comparatively simple to measure. A satisfactory device is the Sward Rocker (*Scientific Section Circ.* No. 510, Aug., 1936) which consists of two flat chromium plated bronze rings with levels and adjustable weight to control oscillation. A test panel is prepared on glass or chrome plated metal by spraying or spinning a film .003 to .005 inch thick. After thorough drying (24 hours at 70° F. humidity 50°) the rocker is placed on the test panel and started to oscillate. Measurement may be taken either of the number of oscillations or the time required for the rocker to lose a definite amplitude. Though this value is not expressed in absolute units, it allows a satisfactory measurement of comparative hardness which may be closely duplicated.

Another satisfactory method is the needle penetrometer, a device consisting of a support, a needle with a blunt point about 1 mm. in diameter equipped with a spring or weights of known value, and a graduated indicator and scale for releasing the needle. A quantity of the emulsion is placed in a shallow tin lid about 5 cm. in diameter and dried to constant weight at 105 c. so that the film is about 2 mm. in thickness. The sample is placed in position and penetration determined. High accuracy is possible, and the readings are easily calculated to terms of absolute hardness.

A determination of hardness in itself, however, is not enough. In practice it is necessary that the type of hardness, whether toughness (by elasticity) or brittleness predominate. A very hard film, if elastic, indicates general durability, whereas too great hardness of the brittle type results in poor wear because of abra-

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sion, cracking, crazing, shattering, powdering, etc. The ratio of brittleness to elasticity is most generally determined through scratch, impact, and flexibility tests.

Devices operating on the scratch principle are the Laurie-Bailey tester, the Graham-Linton tester (Westinghouse Electric & Mfg. Co.), the du Pont Scratch Testing Machine, and others all of which employ a needle, knife blade or stylus of some variety with facilities to apply a measured pressure just sufficient to scratch a film prepared in standard manner on a test panel.

Impact testing devices most applicable to waxes are the Parlin-duPont Impact Tester, Camp Impact Method (*Ind. Eng. Chem.* Vol. 20, 851, 1928), and the Hart Impact Tester (*Scientific Section Circ.* No. 435). These devices in principle consist of a weight or hammer suitably supported to swing fall in contact with a prepared test panel. No numerical measurements but visual indications of some significance result.

Flexibility tests require little in the way of apparatus and are usually not determined exactly but in terms of visual observations of the film after flexing. These tests usually are a combination of flexibility and elasticity. One method (PW151) is the bending of a piece of linoleum coated with the wax with the treated surface on the outside, over a bar or mandril 2 to 3 inches in diameter through an arc of 180°.

Washability

THE washability resistance of a wax film may range all the way from almost complete removal with one or two damp moppings to only slight loss with ten or more thorough cleanings with warm water and soap solution. The ideal test would simulate actual maintenance treatments with the accurate determination of both the percentage of film removed and the condition of the remaining film, whether lustrous or dull, and whether whitening, flaking or loss of adhesion has occurred. The immersion test (PW151) for water resistance gives some indication of these later conditions but does not take into account the effect of friction as in actual washing nor does it tell anything of the amount of film removed.

Another test is the following: "Apply a smooth, well spread out film of the emulsion to a test piece of new rubber or new unlacquered linoleum, preferably dark colored, that has been thoroughly cleaned. Use a soft cloth or felt dauber. After the application has dried for 30 minutes, place under a running water faucet (normal temperature) for 60 seconds. After 30 seconds, rub lightly with tips of fingers to simulate friction from mopping while the water is running over the surface. Remove from water—shake off the excess, dry with a soft clean cloth." This test approximates actual conditions without the use, however, of a detergent. Lack of exact control of conditions and accurate determination of amount of film lost are the disadvantages.

In a third test (M. H. Hersey Co., Ltd.) the material is applied to a piece of parchment paper. After drying it is washed with 2 per cent soap solution using a rag wrung out in the solution. After rinsing with water it is again dried. The difference in weight of the dried test panel before and after washing is taken as the loss of film, which may be computed as per cent of loss. This method has merit but lacks adequate control of application of film and uniformity of washing technique.

A method which eliminates these faults and yields consistent actual values is as follows: Prepare a test panel of bakelite paper or chrome plated metal by the spray procedure with a film thickness of 0.0005 inches (approximately 0.0042 grams solids per square inch or the equivalent to a coverage of about 500 sq. ft. per gallon of 15 per cent material). Allow the panel to dry in a dust free place at a temperature of about 70° F. and a relative humidity of 50° for 48 hours.

Weigh the dry panel and place it in a shallow tray or pan containing just sufficient liquid for complete immersion. (This liquid consists of distilled water, for water washing tests of 1 per cent neutral olein oil soap solution (Govt. Spec. PS561) made up with distilled water and used at approximately 70° F.). Subject the panel surface immediately to ten uniform strokes with a mohair pad, wet with the solution and attach to a holder of size and weight to apply a pressure of 1 gr. per sq. centimeter to the surface. Excellent results are obtained also by the use of a soft bristle brush with the same pressure. Remove the panel and rinse by dipping several times in soft or distilled water. Dry for two hours and weigh. Repeat the procedure ten times or until the wax film has been completely removed. Calculate the results in percentage loss after each washing. A reciprocating motion wear machine lends itself very well to the washing technique for obtaining a high degree of uniformity.

Lustre determinations may be made before the first and after each washing to show the percentage loss of lustre.

Removal

REMOVAL tests may be carried out along the same lines as the washability tests. The prepared panel after drying 48 hours is immersed in a solution of 1 per cent anhydrous olein oil soap (made up from PS561) and 3 per cent commercial 26 baume aqua ammonia. After two minutes it is subjected to ten strokes of the mohair pad, rinsed and dried. The film should be completely removed.

A wash-off test (PW151) which, however, is not applicable to the waterproof type waxes consists in washing a linoleum panel to which wax has been applied with lambs wool applicator or mop and dried for at least 48 hours. An aqueous soap solution of 1 part oil soap (PS561) and 100 parts distilled water by weight at about 50° C. is used as a detergent to determine wash-off prop-

(*Turn to Page* 113)

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CARNAUBA WAX

By J. T. Connolly*

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CARNAUBA wax is produced only in Brazil, and actually only in a relatively small area of that country. Attempts have been made to produce it in Ceylon and elsewhere, but while the trees flourished, they produced little or no wax. As a result of this it is thought that some special quality in the soil and climatic conditions of northern Brazil are largely responsible for carnauba wax.

The growth of carnauba wax has been considerable during the past ten years, which in itself is an interesting factor since this period is generally considered to be one of very difficult times. As an indication of its growth, it is interesting to note that prior to 1928 no statistics were kept on carnauba wax by the U. S. Customs. However, beginning in the year 1928 records indicate that slightly over 5,000,000 pounds were imported at a value of about $1,500,000. This quantity has increased fairly steadily from 5,000,000 pounds to over 12,000,000 pounds in 1937, in which year almost 14,000,000 pounds were imported at a value of $4,800,000. During 1938 imports were slightly less, being 12,400,000 pounds valued at about $4,000,000.

While I am on the subject of statistics, it is interesting to note that the United States receives by far the largest percentage of the total exports from Brazil. Unfortunately, I do not have recent figures, but those for 1934, 1935 and 1936 show that the United States received over 60% of the total exports. Great Britain came next with approximately 15%. Germany and France came next with smaller quantities, leaving only 6% for the rest of the world. I have been fortunate in obtaining prices going back to 1918, which for the No. 3 North Country grade show a high in 1918 of 73c and a low for the same year of 48½c. In 1931, 1932 and 1933 prices remained fairly close, ranging from 9c up to about 13½c. While these figures may not be accurate, they indicate very clearly the great fluctuation in carnauba wax prices.

The tree from which it is obtained is a straight-trunked palm growing from 15 to 50 feet high, with an average height of about 25 to 35 feet. No accurate census has ever been taken, but estimates place the number of trees in the neighborhood of fifty million. While on the face this seems like a large number of trees, it is important to bear in mind that the average production per tree is only about 2.8 ounces of wax per season, about 65 leaves being required for this purpose. This means that only slightly over one ounce of wax is obtained from each tree during each cutting. There are some plantations but, by and large, the trees are scattered irregularly over the entire area. In some locations they are grouped into stands, while in others individual trees are scattered haphazardly. The trees have a growth of leaves at the top, giving them the appearance of huge umbrellas, and it is from these leaves that the wax is obtained.

During the dry months of the year, the wax exudes from the pores of the leaves, the theory being that nature steps in in this way to prevent excessive evaporation of moisture when the tree is exposed to the tropical sun. This theory is somewhat substantiated by the fact that during dry years the production of wax is much greater than during wet years from the same trees. In addition, we might point out that the same species of trees, when growing in the swampy Amazon Valley, yield very little wax.

The wax is harvested during the dry season and the tree will yield two to three crops during an average dry year. During excessively dry years it is sometimes possible to obtain four or even five harvests. However, more than three have frequently proven detrimental to the tree itself and as a result careful producers rarely harvest more than three crops. Harvesting is normally done between August and September, and December and January.

The job of harvesting is done largely by roving groups, much the same as our own farmer harvesting in this country. Frequently these groups will contract with the owners of the land to buy the crop and harvest it themselves. In other cases the crop is harvested by the same roving groups on a percentage basis. At the present time we are advised that there is a tendency on the part of the more careful owners to hire their own groups, however, in order to protect the trees from excessive cutting.

The method of havesting is still very crude and is done almost entirely by hand. The natives attach curved knives to long bamboo poles and sever the leaves from the trees with these. Care must be taken not to strip the tree as this would seriously endanger its life. Very old leaves are not cut since they bear little or no wax.

Broadly speaking, two classes of leaves are cut. First, the unopened leaves, and second, the fully matured. The unopened produce the yellow waxes ranging from Flor to No. 3

*Address before 26th mid-year meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, June, 1939.

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Yellow. The mature open leaves produce the grey grades, including Cauhype, North Countries and Chalky. After cutting, the leaves are spread to dry for two to three days. At the end of this time they are transported to specially built sheds for beating. This must be done very carefully as the wax occurs on the leaves in the form of very light dust and careless handling or a gust of wind would result in losing a considerable quantity of wax. In the sheds, which are built almost airtight in order to prevent the air from entering, the leaves are subjected to violent trenching, threshing and beating. The first operation is to pull them through tooth-like iron blades in order to open the leaves, then they are pulled apart by hand and finally beaten to loosen the wax.

After the floors and walls and even the rafters have been swept to get all of the powder, it is put into melting pots, strained through cloths and placed into molds to harden. The melting is generally done in open iron pots over a wood or charcoal fire. In the case of chalky, water is added, while in the other grades the wax powder is melted dry.

Back in the country only two rough classifications are generally made, that is, the harvesters separate only the yellow from the grey grades. The wax is then ready for shipment to the export ports. After arrival at the seaports the wax is taken into the merchants' warehouses and there reclassified into the grades as we know them, namely, Flor, No. 1 Yellow, No. 2 Yellow, F3 or No. 3 Yellow, Cauhype, No. 2 North Country, No. 3 North Country and Chalky.

This classification requires expert workmen since the grading of carnauba wax is a relatively delicate procedure as the colors graduate naturally from one into another, and accordingly the dividing line between them, say where No. 1 Yellow stops and No. 2 Yellow begins or where No. 2 Yellow stops and No. 3 Yellow begins, is very difficult to determine on a scientific basis.

The task of selection is highly complicated by the light factor. I mean by this that wax will tend to take on a slightly different shade under different lights. In this connection, I am very pleased to point out that both the importers and the manufacturers are very fortunate in having to deal with firms of such excellent character and reputation as those experting carnauba wax to this market. While the room for possible error in selection, as you can see, is very large, actually shipments generally conform to our standard of requirements and very few arrivals here are rejected because of the quality. The manufacturer, of course, is doubly protected in that it is a common practice for importers to carefully examine all parcels on arrival in order to make certain that the quality of same is entirely acceptable both to themselves and to their buyers.

Floor Wax Testing

(*From Page* 109)

erties. The solution when applied to the surface with moderate washing using a soft bristle brush shall cause the removal of the film without powdering or whitening of the surface upon drying.

Tracking

A TEST which serves as an approximate indication of tracking (JM) is that in which limestone dust is lightly sprinkled on the test surface which is then covered with a piece of paper and stepped upon, with one turn being made on the heel. A man weighing between 140 and 160 pounds makes the test. The paper is removed, the surface dusted and examined for spots of adhering dust. It is then buffed and reexamined for traces of dust and scratches. This method might be refined and simple equipment devised in which a particular type of dust is specified and an impinging surface of specified material and area turned upon an axis; the pressure being applied by a series of weights of known denomination so as to measure exactly the minimum pressure required to produce adhesion of the dust with the test surface. Uniformly prepared test panels as well as definite temperatures and humidity are essential.

Conclusion

NO definite system of comparative evaluations for self polishing waxes can be set up, in my opinion, until we have a uniform testing surface and a uniform method of film application. As the standard test surface, I offer a paper, treated with phenolic resins to form a surface which gives characteristics similar to linoleum. It eliminates some of the faults and limitations of linoleum, because the paper which can be obtained cheaply, offers a surface which will remain uniform under practically all conditions and upon which duplicable tests can be made. For electrical testing work such as wear, film thickness, etc., panels of chrome plated tin or steel are suggested with the plating of a definite thickness.

A controlled method for applying a uniform coat of wax has previously been described. Work is still to be done in regard to pressure, quantity of material, etc., but it is believed that this method should be a starting point for the uniform application of waxes to test surfaces.

With a uniform surface and a uniform method of application, a comparatively few simple tests with a minimum of equipment can be evolved which will give the essential properties of a self polishing wax. Those tests which show a satisfactory uniformity of test results are: Slip, when tested by an apparatus as outlined previously; Wear, when tested on a reciprocating motion machine under electrical control; Gloss which can readily be measured on a uniform surface and will give a value that will include lustre, spread, highlighting, etc.; and Washability and tracking which are simple tests on a uniform film.

Comparative values obtained on the Sward Rocker offer important

(*Turn to Page* 127)

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as your base, you can make an insecticide that

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Pyrethrum at Ten Year Peak

WAR, decreased crops, and speculation have in the past few weeks brought the price of pyrethrum to the highest figure in more than ten years, and with it a corresponding increase in the cost of pyrethrum extracts. The war in China is of course the predominant factor contributing to the situation, and has made its effect felt, not only in reduced production but in increased Japanese consumption as well.

As recently as 1936, domestic consumption of pyrethrum in Japan amounted to only 25 per cent of the total crop produced, leaving 75 per cent to be exported. At the present time, that country's domestic consumption has increased to over 50 per cent, and supplies available for export have decreased accordingly. The Japanese Army in China has used great quantities of pyrethrum powder as a delousing material and will probably continue to do so even after hostilities have ceased.

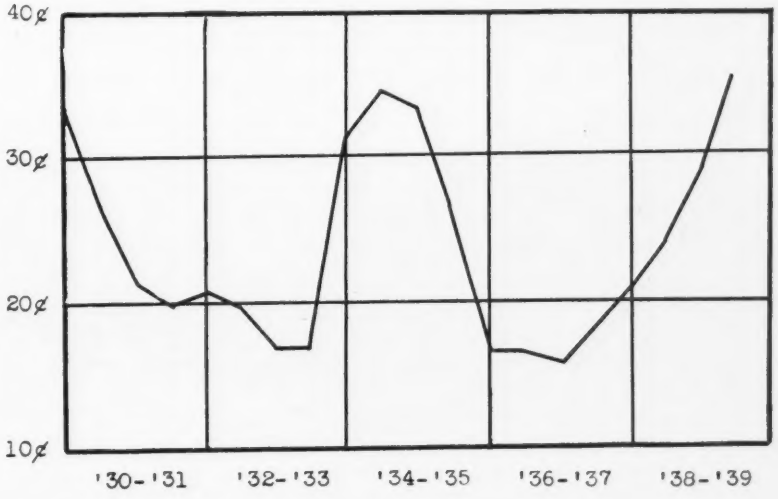
The second factor supporting the higher prices is decreased production. The Japanese have found it necessary to curtail production of pyrethrum, and devote the acreage to raising foodstuffs. Then too, several fires in the early months of the year were reported to have destroyed a substantial tonnage. The total production forecast for the 1939 season is 20 million pounds as compared with 1938 production of 23 million pounds.

One set of figures from Japan indicate that the total amount of pyrethrum available for export for the 12 months ending March 31, 1940, will be only 3,620,000 pounds, which figures is labeled by American importers as silly, as the total share of any such figure for the United States would be only 2,220,000 pounds. The importers point to the previous record of unreliability of Japanese pyrethrum crop and stock reports, and state that there is rarely such a thing as a really accurate report on this crop out of Japan. All reports are colored by speculation and the market position of the source. Nevertheless, if these figures have even a remote resemblance to the true facts, an acute shortage is indicated inasmuch as the United States alone uses anywhere from 10 to 14 million pounds of pyrethrum per year.

Japanese millers, dealers, and packagers of finished products are reported buying up all lots available, knowing that there is a shortage. They are also reported making all possible efforts to keep foreign markets from buying.

Since the beginning of the war in China, the more important commodities have been put under strict government control to reduce speculation. Pyrethrum, however, has not as yet come under that category, and speculators have taken full advantage of the situation. It is only a question of a very short time, say market observers in Japan, before the government will take control of pyrethrum. In fact, this has been expected almost daily for some time. Even higher prices for export may then result, in the opinion of some importers here. This would not be so bad, according to one opinion, if the Japanese Government control also took into consideration some guarantee of quality standards which have been sadly lacking over the past two years.

Price Range on Pyrethrum Powder 1930-1939 at New York, N. Y.



Oil-base Metal Polish

Formulas for oil-base metal polishes are as follows:

		Lb.
1.	Pumice, powdered	30.0
	Kieselguhr	25.0
	Hard soap, powdered	1.5
	Oleic acid	12.8
	Paraffin oil	30.0
	Aluminum stearate	0.2
	Montan wax, bleached	0.5
	Perfume and color	
2.	Levigated chalk	30.0
	Tripoli, first quality	24.0
	Chromic oxide	5.0
	Oleic acid	15.0
	Stearic acid	6.0
	Paraffin oil	12.0
	Paraffin wax, 50-52°C.	4.5
	Ceresine, 58-60°C.	3.5

Suggested perfumes for metal polish are:

1.	Oil of red thyme	15 g.
	Para cymene	48
	Benzylidene acetone	1
2.	Terpineol	4 g.
	Benzyl acetate	2
	Diphenyl oxide	1
	Citronella oil	2
	Artificial sassafras	3
	Origanum, tech.	4

These perfumes are of the "disinfectant" type. G. S. Collingridge. Chem. Age **40,** 448-50 (1939).

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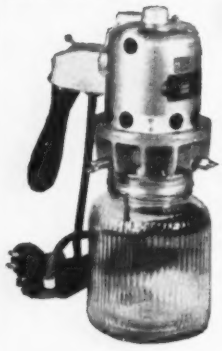

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AUTOMATIC MODEL 54

One quart capacity. Set the automatic time switch at any point from 1 to 30 minutes — sprays desired quantity without further attention —automatically shuts off. Can also be used as a hand spray. Adjustable nozzle sprays in any position. Exclusive volume control regulates density of spray.

ADJUSTABLE NOZZLE SPRAYS IN ANY POSITION
TIME SWITCH OPERATES 1 TO 30 MINUTES AUTOMATIC SHUT OFF
VOLUME CONTROL FINEST DIFFUSING WITH WARM AIR
1 QUART CONTAINER

POPULAR MODEL 53

Our finest compressor-type electric hand sprayer. ⅛ H.P. G. E. Motor, genuine rotary compressor, adjustable nozzle for spraying in any position, exclusive volume control. Beautifully finished castings, one quart container. A compressor-type sprayer of the finest quality at moderate price.

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TORNADO Model 36 with automatic time switch, one gallon capacity
TORNADO Model 6 for mill spraying and moth proofing solutions
TORNADO Models 50 and 51 Fan Type units for crawling insects.

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Standard I. & D. Method
For Testing Liquid
Household Insecticides

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Complete Revised Text
In Your Copy of 1939
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The new 1939 BLUE BOOK contains not only the complete text of the PEET-GRADY test, but also the Seil Method, the Gnadinger-Corl Method, the Wilcoxon-Holaday Method and the Jones Rotenone Method. The new BLUE BOOK also contains articles on the following subjects:

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News.....

Deny Insect-O-Soap Mark

The United States Patent Office recently ruled that "Insect-O-Soap" is not registrable as a trademark for a liquid soap used as an insecticide carrier, on the grounds that the mark is merely descriptive. The application had been made by Andrew Wilson, Inc., Springfield, N. J.

D. & O. Represents Whitmire

Whitmire Research Corp., St. Louis, manufacturers of insecticide materials, has announced that the Dodge & Olcott Co., New York, will act as exclusive distributor of its products for the Eastern section of the United States from Maine to Florida, and in the export field, including Canada and Mexico. The Whitmire corporation specializes in the manufacture of rotenone derivatives and allied insecticide specialties. Dr. H. E. Whitmire is president of the company.

McCormick & Co. Outing

McCormick & Co., Baltimore, held their twenty-fourth annual outing July 15 at Bay Ridge, Md. About nine hundred employees and their families enjoyed a full day's program of games, dancing, bathing, etc. The affair was sponsored by the senior, junior and factory executives of the company.

Progress in Insecticides

"Trend of Progress in Insecticides" by J. T. Martin and F. Tattersfield, Rothamsted Experimental Station, was a contribution to the symposium on "The Trend of Progress" July 13, at the annual meeting of the Society of Chemical Industry. The paper states that the last twenty years have shown unparalleled progress in (a) the use of, and (b) the research on insecticides. Figures were contained in the paper, which gave increases in the world production of certain insecticide raw materials in the last twenty years, such as derris, pyrethrum, nicotine products, calcium arsenates, etc.

A turntable for spraying plants and a miniature Peet-Grady insecticide testing chamber are features of the DuPont exhibit at the World's Fair which are attracting considerable attention among the millions of visitors. The spray used is a standard product with the addition of isobutyl undecylanimide, a recent DuPont development.

Registers Slogan

The Lane Co., insecticides, Altavista, Va., has recently registered the slogan "Guaranteed Moth Protection" with the *Printers' Ink* Clearing House of Registered Phrases.

Food-Drug Act Rules

Firms interested in the rules and regulations issued under the new Food, Drug & Cosmetic Act are having their attention called to a recent notice sent out by the "Federal Register," published by the U. S. Government Printing Office under the direction of The National Archives, Washington, D. C. This notice points out that the "Federal Register" which is an official Government publication is the only place where there are published all the regulations, orders, and other documents associated with the new Food, Drug & Cosmetic Act, and its legal effects. These are published and mailed the same day they are promulgated by the Food & Drug Administration.—in fact the daily issues of the "Federal Register" are in effect daily supplements to the enforcement code. Since enactment of the new law 45 of these documents have been published. Interested firms may secure a sample copy and subscription blanks from Maj. B. R. Kennedy, Director, Division of Federal Register, The National Archives, Washington, D. C. Subscription is ten dollars per year.

New Prentiss Sales Office

R. J. Prentiss & Co., New York, have recently announced the opening of a complete new sales office in Chicago, located at 9 So. Clinton Street. It will be under the direction of A. W. Bevernick, well known figure in the insecticide field, who was formerly located in Minneapolis where he was serving as Western manager for the company. The Chicago office will serve the entire Middle-western area.

Venro Advertising

Venzamer Rotenone Corp., New York, is planning a new advertising campaign for its insecticide "Venro," a repellent for Japanese beetles. Redfield-Johnstone, Inc., New York, will handle the account, using newspapers, radio and trade papers.

To Sell Kessler Products

W. W. Angus, Inc., New York, has been formed to act as exclusive sales distributor for products manufactured by Kessler Chemical Corp., insecticide raw materials, New York. W. W. Angus, head of the new company had been associated with the Kessler organization for fourteen years. All sales agents formerly with the Kessler company in various parts of the country will continue with the Angus firm.

Chiris Booklet

Etablissements Antoine Chiris, Grasse, France, have recently issued an attractive booklet telling the history of the company since it was founded in 1768 by Antoine Chiris.

CRESOL...CRESYLIC ACID...CRESOL U.S.P.
TAR ACID OILS...XYLENOL
NAPHTHALENE

and other COAL TAR PRODUCTS
FOR THE SOAP *and* DISINFECTANT
INDUSTRY

15 PLANTS TO SERVE YOU

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4 DECADES OF SERVICE

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Metal Polish
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Deodorizing Blocks
Urinal Cakes
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Moth Preventives
Furniture Polish
Prepared Wax Polish
(Liquid and Paste)

WAXES	POLISHES	DISINFECTANTS AND DEODORANTS
Non-Rubbing	Metal	Coal Tar Disinfectant
Prepared Liquid	Furniture	Pine Oil Disinfectant
Prepared Paste	Bar Oil	Urinal Cakes
Powdered Dance Wax	Cedar Oil	Deodorant Blocks
	Silver Paste	Perfume Sprays
	Lemon Oil	Pine Deodorant

INSECTICIDE—FLY SPRAYS—MOTH SPRAYS—SOAPS

Write for Our Descriptive Catalogue and Price List.

UNCLE SAM CHEMICAL CO. INC.
329 EAST 29th STREET, NEW YORK, N. Y.
Established 1915

"Oh, yes. Dr. McGovran recommended the new diet to build up their psychological resistance against these modern insecticides."

Niemeier Adds New Products

Two new products have been placed on the market by F. A. Niemeier Chemical Co., manufacturer of "Diamond Brand" cleaning chemicals, Cincinnati. A Bug Remover, put up in three-ounce cans, is intended for use on automobiles in removing dead bugs and other dirt accumulations. The other product is a new polishing wax for automobile finishes.

Wholesale Druggists to Meet

A reproduction of a newspaper of seventy years ago is being used as a means of informing members about the entertainment program at the 65th Annual Convention of the National Wholesale Druggists Association to be held at The Greenbrier Hotel, White Sulphur Springs, W. Va., Sept. 23-27. William T. Allen, chairman of the arrangements and entertainment committee and T. K. Almroth, both of Owens-Illinois Glass Co., Toledo, plan to send out several more issues of this paper, each containing along with "atmospherical" articles, something which pertains to the convention entertainment plans.

Agicide Wins Cube Appeal

Agicide Laboratories, Milwaukee, recently won their appeal before the United States Circuit Court of Appeals for the Seventh Circuit, in the case involving the right to use cube root as an insecticide. The appeal sought review of the decision of a district court which upheld the validity of the William J. Dennis patent covering the use of cube, with its fibrous material removed, as an insecticidal dust or spray.

Frontier Alkali Corp. Moves

Frontier Alkali Corp., janitors supplies, Buffalo, has moved to new quarters at 27 Barnett Place.

Shawmut Specialty Expands

Shawmut Specialty Co., Boston, manufacturers of floor maintenance products and other sanitary specialties, has moved its plant and offices to larger space at 311 Centre St., Jamaica Plain, Mass., a suburb of Boston. The company was formerly located at 91 Bickford St., Boston. Charles Dawe, president of the firm, stated that the company's business has grown substantially over the past few years, necessitating much larger factory facilities and additional equipment to take care of expanded demand for its products.

Arrest "Panolive" Salesman

Montreal Better Business Bureau reports that Adelard Pare, selling an insecticide in the country districts under the name of "Panolive" and representing it as a product of the Colgate, Palmolive, Peet Company, Ltd., has been arrested and sentenced to one month in jail. Numerous complaints were received from irate householders who had been promised sets of dishes as a premium but never received them.

Nat'l Oil Products Building

The executive committee of National Oil Products Co., Harrison, N. J., recently approved plans for a 5-story brick or concrete building, to house manufacturing equipment which will provide additional facilities for the production of industrial chemicals and processing oils. The new structure, which will be located on the Passaic River site of the company's plant in Harrison and will cost between $150,000 and $200,000, is expected to be completed by winter.

U. S. Supplies Mexican Polish

Imports of all type of polishes into Mexico came mainly from the United States during the past few years; this country supplying about 60 per cent of the total. Imports of floor wax were also largely supplied by the United States. Imports of floor wax for the first six months of 1938 were valued at 11,000 pesos.

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FOR BETTER NO RUBBING WAXES

No. 65 EXTRA WHITE REFINED BLEACHED SHELLAC

No. 66 D. C. REFINED BLEACHED SHELLAC

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Will Dissolve Quicker and Require Less Alkali Thereby Producing More Durable, More Waterproof and Higher Gloss Finishes

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Philadelphia, Pa.—Frances Patterson
Chicago, Ill.—Harry Holland & Son, Inc.
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Croton-on-Hudson **New York**

Bobrick Files Name Suit

Bobrick Manufacturing Corporation, soap dispenser manufacturer of New York and Los Angeles, has just filed suit in the New York State Supreme Court, County of New York, seeking to enjoin M. B. Feinson from any further use of the name "Bobrick." It is charged in the complaint that Mr. Feinson, who formerly operated an office for the company in New York City under the name of Bobrick Dispenser Company, signed an agreement on June 30, 1938, in which he stated that he would discontinue use of the name Bobrick Dispenser Company within 90 days. It was provided that the telephone listing under the name of Bobrick Dispenser Company be continued until the publication of the next edition of the Manhattan telephone book. According to the complaint, Mr. Feinson still lists the Bobrick Dispenser Company name in the current issue of the telephone directory and the same name also appears on the building directory at his office and is used in circulars and advertising matter. A permanent injunction restraining such use and accounting for profits made from past wrongful use of the name is sought.

Notre Dame Honors Reilly

The honorary degree of doctor of laws was conferred upon Peter C. Reilly, president, Reilly Tar & Chemical Co., Indianapolis, at the ninety-fifth commencement exercises of the University of Notre Dame.

Stoddard Joins D. & O.

Russell B. Stoddard who has spent several years past in the development of rotenone insecticide materials, and formerly associated with R. J. Prentiss & Co., New York, has joined the Dodge & Olcott Co., New York, in charge of their newly formed insecticide department. Dodge & Olcott Co. entered the field two years ago with Essenol and have since made several additions to their line of insecticide materials. The establishment of the new department not only implies further development of the Essenols for household and agricultural insecticides, but marks the undertaking by D & O of large-scale manufacture of various cube and pyrethrum extractives, according to the company. The new extraction methods are now in commercial operation and further announcements regarding the products will be made shortly.

Anchor Hocking Closes Branch

Anchor Hocking Glass Corp., Lancaster, Ohio and its affiliate, Anchor Cap & Closure Corp., Long Island City, N. Y., recently announced the closing of their New Orleans office. J. M. Porter, Jr., formerly in charge of this office will rejoin and assist his father who is in charge of the Memphis, Tenn., office. The territory formerly covered by the New Orleans office, will be served by John R. Nolan out of the Houston, Texas, office.

Senn Purchases Bulk Plant

George Senn, oil and naval stores broker, Philadelphia, has purchased the Richmond Bulk Plant of the Atlantic Refining Co., in that city. Although alterations are being made, the new owners are in and operating the plant. Facilities include rail siding for unloading tank cars, a filling room with automatic equipment, bulk storage units of over 200,000 gallons capacity and warehousing facilities for packaging and drumming.

Wels on Trip to Coast

Louis Wels, secretary, Twin City Shellac Co., Brooklyn, N. Y., is on a month's trip to the coast with his family.

Fourman Returns From Trip

Dr. Victor G. Fourman, chief chemist, Compagnie Parento, Inc., essential oils, Croton-on-Hudson, N. Y., has returned from Canada where he spent a number of weeks visiting the Toronto office of his company in the company of Eugene C. Barton, manager of Compagnie Parento, Ltd., of Canada. While there, Dr. Fourman attended the convention of the Canadian Perfumers Association.

Alexander McLaughlin Dies

Alexander McLaughlin, chairman of the board, McLaughlin-Gormley-King Co., insecticidal raw materials, Minneapolis, died on July 7 at his home in that city. He was born in northern Ireland of Scotch descent and came to this country when a young man, residing in Philadelphia and then St. Paul. It was there, in 1883, that he entered the employ of Lyman and Eliel Drug Co. which later became the Minneapolis Drug Co. He left their employ in 1901 to found the Twin City Drug Mills. This was a partnership including many of the present stockholders of the McLaughlin - Gormerly - King Co. which was founded in 1907. The business founded in 1901 was that of importing, milling and manufacturing crude botanical drugs. Shortly after the close of the war, the company became interested in other lines, especially insecticides. Mr. McLaughlin's illness necessitated his withdrawal from active participation in the business in 1934, but in 1935 he was elected chairman of the board of directors. He is survived by his wife, two daughters and a son, George A. McLaughlin.

Chinese Polish Market

Floor and metal polishes are manufactured in Shanghai, but no statistics are available covering the output. However, it is believed that the annual production is not very large, as the quality of the domestic brands is generally inferior to imported polishes, which supply most of the domestic requirements. Polishes manufactured in Shanghai are cheap, floor waxes retailing at from 0.75 yuan to 1.25 yuan per 1-pound tin, as compared with 2.50 to 3.60 yuan per tin for imported brands. Import statistics are not obtainable.

F. P. Shepard Dies

Franklin P. Shepard, 85, Norwood, Ohio, died recently. He was formerly president of H. C. Lindsey & Co., a Cincinnati cleaning compound manufacturing concern that went out of business some years ago, after Mr. Shepard's retirement in 1920.

New specialties

Four items which particularly show the jobber a wide margin—

CONCRETE RESURFACER & PATCHER
To repair concrete without chipping and resurface concrete, wood and metal.

CONCRETE HARDENER
Makes concrete dustproof, wearproof and waterproof.

SLUDGE REMOVER
To remove sludge from oil burners, saving oil and repair bills, — gives burner an even flame and more heat.

SOOT REMOVER
Cleans chimneys and boiler tubes. Saves coal bill and smoke nuisance.

Send for samples, prices and complete information on profits reselling under your private label.

PROMINENT SPECIALTY CO.
160 Fifth Avenue **New York**

WARNING!

Reprinted in part from The N. Y. Times of Friday, June 23, 1939

JAPANESE BEETLES ABOUT TO STRIKE

TRAPS AND SPRAYS URGED

By next month, according to predictions by the United States Department of Agriculture, the iridescent insect of voracious appetite and wandering ways will be swarming through this area by more millions than ever before. After ten months in the soil, where more recently it has been invisibly eating the roots of carefully tended lawns, the beetle is due now to come to the surface and begin its annual banquet on the tender leaves of the rose-bush and the zinnia, the peach tree, the grapevine, and all the other verdure that the garden lover has raised. By the end of next month—

WE ARE PREPARED TO SHIP AT ONCE

CHEMICALS and SPRAYS for JAPANESE BEETLE CONTROL

COLE CHEMICAL CORP.
LONG ISLAND CITY NEW YORK

A new floor wax

for the janitor supply and jobbing trades which is

waterproof

and which gives a

high gloss

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ZIP-ON WAX

Dries very bright and becomes water resistant as soon as dry. Wax content guaranteed 100% Carnauba. Supplied in bulk, or with your label in any size container.

Shawmut Specialty Co.
311 Centre St. **Jamaica Plain, Mass.**

Oakite Celebrates 30th Anniversary

OAKITE Products, Inc., New York, celebrates its thirtieth anniversary this year. It was in 1909 that D. C. Ball, present president and chairman of the board, announced the development of the first "Oakite" material, the beginning of a family of cleaning products which now numbers in excess of fifty.

The company was originally named the Oakley Chemical Company and was started with nine people in the organization. Since then it has increased to a personnel of several hundred employees, with not only a complete chemical laboratory staffed by experienced chemical engineers, but a separate laboratory of mechanical engineers for the development of improved methods of material application. From the beginning, the company devoted itself to the development of cleaning materials and methods for industry, and it is natural that the most striking growth has been in the Oakite Industrial Service Department. Starting out with three men, this department now numbers more than one hundred. Their task is to bring particular materials and correct methods of application to meet not only the maintenance but the production cleaning problems of industry. Due to the technical character of this work, a preliminary training extending over several months is given to each new Oakite Service Representative.

Technical bulletins are frequently released to the Oakite organization, and there is a monthly technical magazine, *Review of Month*, which has a strictly internal organization circulation. In 1917, the first issue of *Oakite News Service* was announced. This small magazine, which is published every two months, has since been issued regularly, and is mailed to 85,000 concerns in the U. S. and Canada. In 1911, the first trade paper advertising of Oakite products appeared in the magazine, *American Machinist*. Since then, Oakite has not missed a month in leading industrial journals, telling its story to engineers, technicians and executives in many fields. At the present time between sixty-five and seventy business publications are being used.

When in 1914, the war in Europe cut off the supply of German potash, the Oakley Chemical Co. was prepared with specially compounded materials. Literally millions of shells were washed with "Oakite" materials. In 1926, the company name was changed from the original Oakley Chemical Co. to Oakite Products, Inc. At the same time, an employee stock ownership plan was put into operation. Today, members of the organization own or control 97 per cent of the company's stock.

In 1927, Oakite, one of the fifty-three different, "Oakite" materials, was given greatly added distribution for household use through the regular grocery trade channels, and since its placement on the retail market, has enjoyed a steady growth in sales. The company maintains a Home Service Department to aid in the solution of household cleaning problems.

Perfume World's Fair Lakes

When the ambitious young lawyer told his political mentor that he wanted to do big things, and asked specifically what he could do that would be really big, he was advised by said mentor to wash an elephant. Now, it seems that when a perfumer in this day and age wants to do something big, he perfumes a lake or a lagoon or other large body of water. At least this seems to be a logical conclusion when one in walking past the statue of George Washington on Constitution Mall at the World's Fair, detected the distinct and pleasant odor of flowers,—and in the absence of any flowers at that exact spot, traced the aroma to the water of the lagoon. Further detective work unearthed the information that the perfuming of the lake waters was being done by none other than van Ameringen-Haebler, Inc., New York perfuming materials house, and that not only was G. Washington standing in an atmosphere of flowery perfume, but that several other lagoons at the fair were being similarly perfumed.

The method for perfuming large bodies of water such as is used at the World's Fair is a development of the past year and a half at van Ameringen-Haebler laboratories. A patent covering the method of application of the perfume has been applied for, as it is the method of continuous application which represents the trick in correct dissemination of the odor. This is stated to be the first time that large scale perfuming has been attempted outdoors and for a large mass of water. The process perfumes the surrounding area and depending on wind and humidity conditions, the odor can be smelled several hundred feet away from the source. The particular odor used at the Fair is a flower bouquet, and has been termed "Periscent."

Florida Bill Includes Soap

An Act to provide for, regulate and control the use of soaps, oils, gases, etc., in the processing of citrus fruits has recently been introduced into the Florida Legislature. It is known as Senate Bill No. 165. The bill states that every manufacturer shall furnish the Commissioner of Agriculture of the State of Florida with the complete formula followed in the manufacture of the soap, together with a sample and a description of the manner in which the soap is intended to be used. Before any such soap product may be sold for the processing of citrus fruits, the manufacturer must procure a license from the Commissioner of Agriculture, signifying his approval. Provision is made in the Act for violations. If convicted, the person may be subject to a fine not to exceed one thousand dollars, or subject to imprisonment not to exceed one year. If passed, the new law will take effect August 1, 1939.

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The Chemistry of Laundry Materials

by D. N. JACKMAN

A discussion of materials used in the laundry, starting with water and going through alkalies, soaps, bleaches, starches, etc. The book contains valuable information on the chemistry of laundry materials, not stopping with the well-established products but discussing as well the newer detergents and assistants for scouring and washing, giving information on the so-called synthetic soaps and the other products whch now form the great number of newer detergents. 240 pages, $2.50 per copy.

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We manufacture a complete line of wool applicators, cotton dust mops and cotton wet mops. For prices and samples, write

AMERICAN STANDARD MFG. CO.
2509-13 South Green Street Chicago, Ill.

Chemical Salesmen Golf

Fifty-five members and guests attended the second golf tournament of the Salesmen's Association of the American Chemical Industry held at the Plandome Golf Club, Plandome, L. I., on July 11th. In the absence of Bart F. Sheehan, Jr., chairman of the entertainment committee, N. Harold Fyffe, manager of the local office of the Oldbury Electro-Chemical Co., took charge. Prize winners were as follows: *Members, Class A*, Charles Alexander, Seldner & Enequist; C. W. French, Jr., Oldbury Electro-Chemical Co., and Walter Merrill, Joseph Turner & Co. *Class B*, Fred Koch, Dow Chemical Co., and Ira Vanderwater, R. W. Greeff & Co. *Members, kickers*, Ira P. Mac Nair, Mac Nair-Dorland Co.; H. Bercow, H. H. Rosenthal & Co.; Chas. Slater, J. T. Baker Chemical Co., and Herbert B. Linger, Commercial Solvents Corp. *Guests, kickers*, J. B. Eakins, Jr., J. S. & W. R. Eakins, Inc. *Guests, low gross*, Joseph deRaismes, Bakelite Corp. *Members and guests, low putts*, Donald Woodford, Grasselli Chemical Division, E. I. du Pont de Nemours & Co.

Peru Insecticide Market

The market for household insecticides in Peru is highly competitive, according to information received by the Department of Commerce from the commercial attache at Lima. Domestically manufactured insecticides, produced by three companies, are reported to have supplied about 20 per cent of the market requirements, while American brands supplied approximately 65 per cent, and all others, including Japanese preparations, 15 per cent. American insecticides are preferred by the better-class Peruvians to the locally manufactured products.

Lukens Appoints Curtiss

Lester M. Curtiss, who has been assistant general superintendent of Lukens Steel Co., Coatesville, Pa., has been appointed general superintendent in charge of all operations of the company. Mr. Curtiss succeeds G. Donald Spackman, who has been granted a leave of absence at his own request. Mr. Curtiss joined the Lukens company in 1919 as assistant engineer of tests.

Hexol Signs Stipulation

Hexol, Inc., San Francisco, has entered into a stipulation with the Federal Trade Commission to discontinue false advertisements in the sale of a disinfectant "Hexol." The company had advertised that "Hexol" will act as a sterilization agent, its action on spores is stronger than phenol, that it is non-toxic and that it has all the advantages of phenol.

W. H. Dow Gets Degree

Willard H. Dow, president and general manager, Dow Chemical Co., Midland, Mich., was awarded an honorary degree of Doctor of Science at the recent commencement exercises of the Michigan College of Mining and Technology.

Getz Exterminators Move

Getz Exterminators, Inc., have just opened a branch office at 11 East 14th Street, Kansas City, Mo. P. H. Burnett is in charge.

Auto Polish Stipulation

Instant Kleen Laboratories, Dayton, O., has entered into a stipulation with the Federal Trade Commission to discontinue misleading representations in the sale of its auto polish "Instant Kleen." The company had implied that salespersons or dealers selling the product earn amounts in excess of amounts normally earned; that there is no competition in the sale of the product, and that sales are guaranteed.

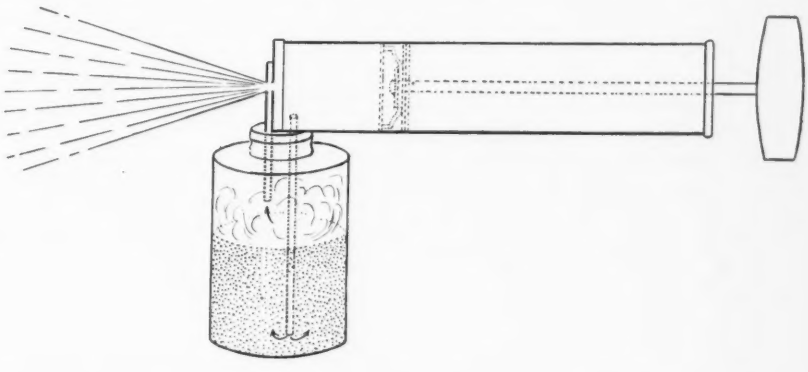
Lehn & Fink Earnings Up

Lehn & Fink Products Corp., soaps and disinfectants, Bloomfield, N. J., recently reported a net profit of $307,666 for the six months ending June 30th, this year. This was equal to 76 cents each on 400,000 shares of $5 par capital stock, against $154,796, or 38 cents a share for the same period last year.

New Janitor Supply Co.

Trimpe Supply Co., Indianapolis, has recently been organized by E. H. Trimpe, to deal in janitor's supplies and equipment. The address of the new firm is 27 So. Delaware Street.

A NEW principle for spraying powdered insecticides is covered in U. S. Patent No. 2,126,924 issued to William H. Rose of Jersey City, N. J. The new duster forces air into the body of the powder in the can and air floats it in the space at the top from which it is simultaneously forced and sucked into the top tube and blown out. The exterior of the blower appears much the same as other small dusters on the market. The stock can of powder screws on the duster gun as shown. Claims for the duster are that it breaks up the powder into finer particles, covers a wider area, does not blow out larger particles, but returns them to the can to be broken up. The patent also covers the same principle applied to larger dusting units.



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FLOOR WAX

SPECIALLY PRICED FOR THE JOBBING TRADE
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- Made for HEAVY DUTY usage . . . quick drying, waterproof and excellent coverage qualities.
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- Full details, generous samples available upon request.
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TWIN CITY SHELLAC CO., Inc.
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HOCKWALD'S DISPENSERS
No. 1 Wall Type **No. 2 Basin Type**

All parts replaceable including glass globes. Can be disassembled in two minutes without mechanical skill, yet when in operation it is securely locked together. No cement or plastics used in any part of the machine.

WRITE FOR DESCRIPTIVE LITERATURE AND PRICES

Hockwald Chemical Company
135 Mississippi Street
San Francisco, Cal.

LARGEST PACIFIC COAST MFR. OF POTASH SOAPS AND SANITARY PRODUCTS

New Insecticide Activator

Derris root extractives in a recently developed auxiliary solvent, butyl mesityl oxide oxalate, are now being offered as a new raw material for incorporation in household insect sprays and live stock sprays by U. S. Industrial Chemicals, Inc., New York, under the trade name of "Derex." The product is now commercially available in two forms, the "standard" product containing rotenone, and "special" containing no rotenone, but stated to be of the same insecticidal strength. The manufacturer states that butyl mesityl oxide oxalate permits certain and more economical incorporation of rotenone-bearing extractives in kerosene-type liquids, and that the solvent has definite insecticidal value of its own, requiring less of the insecticidal material. The manufacturer claims that the material when used in combination with pyrethrum or organic thiocyanate concentrates, permits savings up to fifty per cent against the cost of regular spray materials. The maker also states that the material tends to inhibit oxidation, giving greater stability to insecticides on the shelf, and that extensive toxological tests show it to be non-poisonous to humans.

Naphthenanilide Sulfonate

Naphthenanilide and the anilides of the fatty acids such as stearic acid and palmitic acid can be sulfonated by the action of fuming sulfuric acid. The resulting sulfonic acids and their salts are good emulsifiers. They prevent the precipitation of fatty acids from soaps in the presence of acids and hold free fatty acids in aqueous solution even in the presence of aluminum acetate and other salts. Henri Blum. *Bull. soc. ind. Mulhouse* **105,** 113 (1939); through Chem. Abs.

Offer Fatty Acids

Armour & Co., Chicago, have developed and are offering pure fatty acids and standard mixtures of fatty acids in commercial quantities under the name of "Neo-fat." Among them are the following: Neo-fat 1-56 (palmitic acid), Neo-fat 1-60 (75 per cent stearic acid), Neo-fat 165 (pure stearic acid), Neo-fat 11 (lauric acid) and Neo-fat 13 (myristic acid).

Fritzsche Moves Branch

Fritzsche Bros., New York, essential oil house, have moved their San Francisco branch office to larger quarters at 729 Rialto Building. This branch, as well as that in Los Angeles, is managed by Stanley Crouch, the firm's Coast representative.

Keeley Co. Moves

Charles H. Keeley Co., exterminators, Lansing, Mich., recently moved to other quarters at 118 N. Larch Street.

Trade Marks Granted

(*From Page* 49)

369,164. Souring Agents. Ecclestone Chemical Co., Detroit. Filed December 28, 1938. Serial No. 414,259. Published April 25, 1939. Class 6.

369,165. Souring Agents. Ecclestone Chemical Co., Detroit. Filed December 28, 1938. Serial No. 414,260. Published April 25, 1939. Class 6.

369,172. Tooth Powder. Pycope Inc., Jersey City, N. J. Filed January 4, 1939. Serial No. 414,507. Published April 25, 1939. Class 6.

369,202. Disinfectants and Insecticides. Salem Chemical & Supply Co., Salem, Mass. Filed January 28, 1939. Serial No. 415,354. Published April 25, 1939. Class 6.

369,218. Liquid Cleaning Agent. Grabo Chemical Co., Grand Rapids, Mich. Filed February 6, 1939. Serial No. 415,626. Published May 9, 1939. Class 4.

369,225. Polish, Soap and Cleanser. Lndustrial Soap Co., St. Louis. Filed February 8, 1939. Serial No. 415,779. Published May 9, 1939. Class 4.

369,265. Polishing Waxes. Union Oil Co. of California, Los Angeles. Filed February 27, 1939. Serial No. 416,489. Published May 9, 1939. Class 16.

369,266. Metal Polish. Union Oil Co. of California, Los Angeles. Filed February 27, 1939. Serial No. 416,490. Published May 9, 1939. Class 4.

369,331. Laundry Detergents. Clarence M. Cobb, Boston. Filed March 9, 1939. Serial No. 416,840. Published May 9, 1939. Class 4.

369,332. Shaving Cream. Colgate-Palmolive-Peet Co., Jersey City, N. J. Filed March 9, 1939. Serial No. 416,841. Published May 9, 1939. Class 4.

369,333. Shaving Cream. Colgate-Palmolive-Peet Co., Jersey City, N. J. Filed March 9, 1939. Serial No. 416,842. Published May 9, 1939. Class 4.

369,350. Toilet Soaps. John J. Tracey Co., Chicago. Filed March 13, 1939. Serial No. 417,036. Published May 9, 1939. Class 4.

Frenchee Appoints Agent

Frenchee Chemical Co., shoe polishes, Richmond Hill, N. Y., has recently appointed Sternfield-Godley, Inc., New York, to handle its advertising account.

Floor Wax Testing

(*From Page* 113)

data. This should prove an important testing method because it is indicative of so many combined factors —tack, hardness, slip, wear, powdering, chalking and numerous other qualities. There are to my mind three other things needed in addition to the above,—a method of testing ease of application; ease of maintenance, polishing and cleansing; and a simple method of measuring coverage.

(PWI5I) — Government Specification PWI5I.

(JM)—Detailed Method of Examination of Polishes for Johns-Manville Floor Tile.

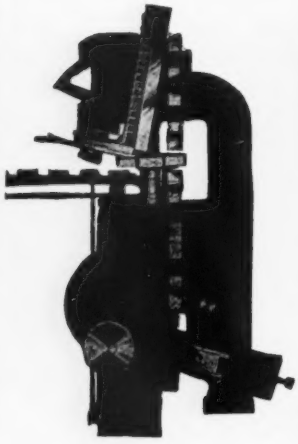
(VB)—Veteran Bureau Specification for Self-Polishing Wax.

(RMA)—Specifications of the Rubber Floor Manufacturers Division of the Rubber Manufacturers Association, Inc. (1936-1937).

(PA) — Commonwealth of Pennsylvania Specification for Wax, Floor Water Emulsion Specification for 1936 and 1938.

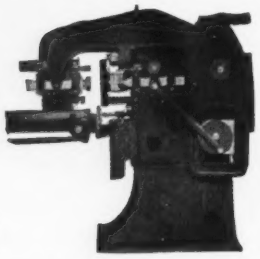
(Gardener) — Physical and Chemical Examination of Paint, Lacquer, Varnishes, Gardens.

Special Offerings of SOAP MACHINERY *Completely Rebuilt!*

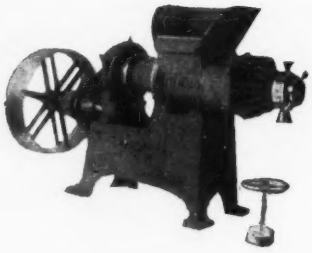


Small size fully automatic Jones toilet soap press. Capacity 150 to 200 small cakes per minute. A real buy at an attractively low price. Has been completely rebuilt in our own shops.

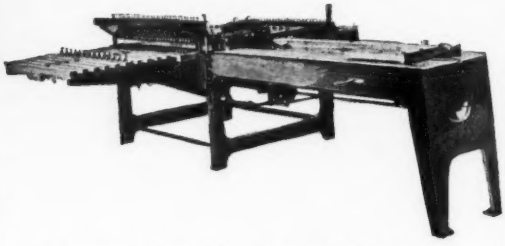
H-A SOAP MILL
This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls.



4 JONES AUTOMATIC combination laundry and toilet soap presses. All complete and in perfect condition.



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally guaranteed.



2 Automatic Power Soap Cutting Tables.

INVESTIGATE THESE SPECIAL BARGAINS

•

Proctor & Schwartz 2-Fan Soap Chip Dryer with 36″ Roll. Complete. Very fine condition.

Johnson Automatic Soap Chip Filling, Weighing and Sealing Machines for 2 lb. and 5 lb. Packages guaranteed in perfect condition.

ADDITIONAL REBUILT SOAP MACHINERY

All used equipment rebuilt in our own shops and guaranteed first class condition.

- H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.
- Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.
- Ralston Automatic Soap Presses.
- Scouring Soap Presses.
- Empire State, Dopp & Crosby Foot Presses.
- 2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.
- H-A 4 and 5 roll Steel Mills.
- H-A Automatic and Hand-Power slabbers.
- Proctor & Schwartz Bar Soap Dryers.
- Blanchard No. 10-A and No. 14 Soap Powder Mills.
- J. H. Day Jaw Soap Crusher.
- H-A 6, 8 and 10 inch Single Screw Plodders.
- Allbright-Nell 10 inch Plodders.
- Filling and Weighing Machine for Flakes, Powders, etc.
- Steel Soap frames, all sizes.
- Steam Jacketed Soap Remelters.
- Automatic Soap Wrapping Machines.
- Glycerin Evaporators, Pumps.
- Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.
- Perrin 18 inch Filter Press with Jacketed Plates.
- Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.
- Day Grinding and Sifting Machinery.
- Schultz-O'Neill Mills.
- Day Pony Mixers.
- Gardiner Sifter and Mixer.
- Proctor & Schwartz large roll Soap Chip Dryers complete.
- Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.
- Day Talcum Powder Mixers.
- All types and sizes—Tanks and Kettles.
- Ralston and H-A Automatic Cutting Tables.
- Soap Dies for Foot and Automatic Presses.
- Broughton Soap Powder Mixers.
- Williams Crutcher and Pulverizer.
- National Filling and Weighing Machines.

Send us a list of your surplus equipment— we buy separate units or complete plants.

NEWMAN TALLOW & SOAP MACHINERY COMPANY

1051 WEST 35th STREET, CHICAGO — Phone Yards 3665-3666

Our Forty Years Soap Experience Can Help Solve Your Problems

Classified Advertising

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Positions Wanted

Soap Maker, Chemist, Perfumer: Old timer in toilet, laundry, soda and potash soaps. Wants short jobs. Will teach processes, remodel plants, etc. Address Box No. 658, care of *Soap*.

Chemical Engineer—man with twelve years practical technical sales experience with two large soap and cosmetic manufacturers desires new connection with smaller firm, possibly with idea of purchase of part interest. Graduate chemical engineer with degrees from two universities. Thorough practical and technical experience, background in oil refining, glycerine recovery and soap manufacture. Address Box No. 656, care of *Soap*.

Insecticide Chemist: A. B. in Chemistry, M. A. in Entomology, 24 years old, desires insecticide research, go anywhere. Address Box No. 661, care of *Soap*.

Experienced Soap Maker wishes to make permanent connection. Able to manufacture Neutral Liquid Soap (without doctoring), also insecticide non-rubbing wax, prepared liquid and paste waxes, metal polishes, etc. Address Box No. 655, care *Soap*.

Chemist: Thoroughly experienced in oils, soaps, starch products, textile chemicals, etc., will help you with your problems. Available part time if desired. Can help you straighten out plant troubles at moderate cost. Address Box No. 657, care of *Soap*.

Soap Maker and Chemist with long experience in the manufacture of all kinds and grades of soaps and soap products. Pacific coast preferred. Address Box No. 654, care of *Soap*.

Positions Open

Salesman: Experienced with following among bulk consumers of sanitary and floor treatment chemicals; hospitals, hotels, dairies, public buildings, schools, industries, etc. Excellent, permanent commission contract. Write full details for attention. Address Box No. 653, care of *Soap*.

PROFIT INSURANCE

Decrease your production cost and increase your profit by using more efficient equipment. Consolidated's Guaranteed Good Rebuilt Machinery is good "Profit Insurance."

Crutchers	Pulverizers
Soap Kettles	Soap Pumps
Powder Mixers	Soap Chippers
Granite Mills	Filter Presses
Plodders	Soap Frames
Slabbers	Powder Fillers
Foot and Automatic Soap Presses	Labellers
	Tanks
Cutting Tables	Boilers

Selected Specials

2—Proctor & Schwartz Soap Chip Dryers, steel frame; 1 with single cooling roll.
3—Houchin Plodders, 10", 8".
4—Steel Wool Mfg. Machines, complete.
3—Automatic Soap Wrapping Machines, electric glue sealers, adjustable.
1—Jones automatic Soap Press.
2—Pneumatic Scale Carton Packaging Units.

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We buy your idle Machinery—Send us a list.

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● Fitrol Products are subjected in their manufacture to a treatment which removes earthy contamination. The resultant activated product has a purity which recommends it to all processors of edible as well as inedible oils and fats.

FILTROL 34F
FILTERING MATERIAL FOR DECOLORIZING AND PURIFYING
FILTROL CORPORATION
GENERAL OFFICES, 315 W. FIFTH ST., LOS ANGELES, CALIFORNIA
PLANTS: VERNON, CALIFORNIA; JACKSON, MISSISSIPPI

Positions Open: Salesmen wanted to sell new insecticide concentrate. Liberal commission and exclusive territory. Write Sargent Mfg. Company, Mount Vernon, New York.

Distributors: Manufacturer wants distributors for Waterless Cleanser in several states. Investment required about $1000.00. Address The Wiggins Chemical Company, 214 Walnut Street, Cincinnati, Ohio.

Position Open: Salesmen wanted to sell soap powder and allied products in bulk to Janitor Supply Houses and Wholesale Grocers in Philadelphia and Boston territories. Address Box No. 659, care of *Soap.*

Live wire experienced maintenance salesmen—selling highest quality products. Out of town territories. Must have car. Straight commission. District managership with override to successful men. Address Box No. 660, care of *Soap.*

Soap Maker Wanted:—Man with wide experience in soap manufacture required by South American manufacturer for a period of six months to instruct employees of his plant in modern soap manufacturing methods. Will sign contract for six months. Man with good educational background and soap making experience required with a knowledge of Spanish preferred. Communicate directly with LA UNION, S.A., Apartado 3, Torreon, Coah., Mexico.

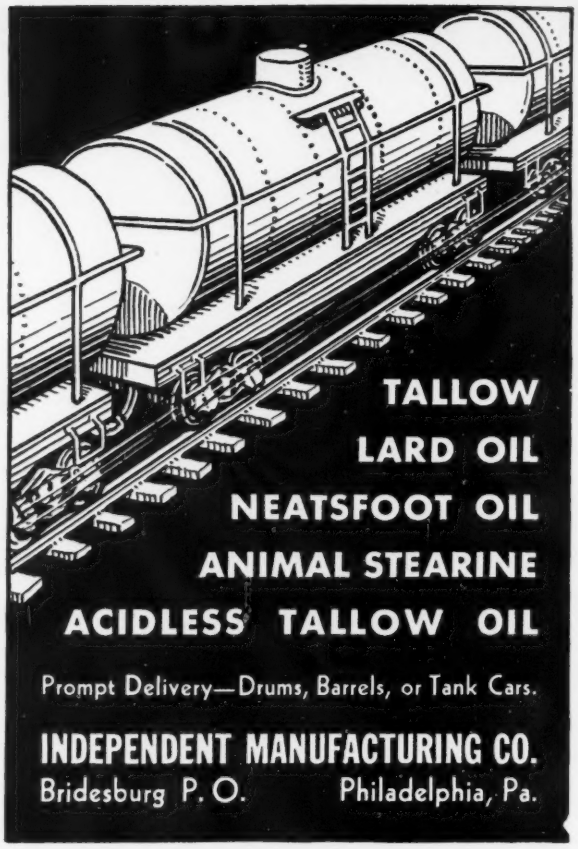
Miscellaneous

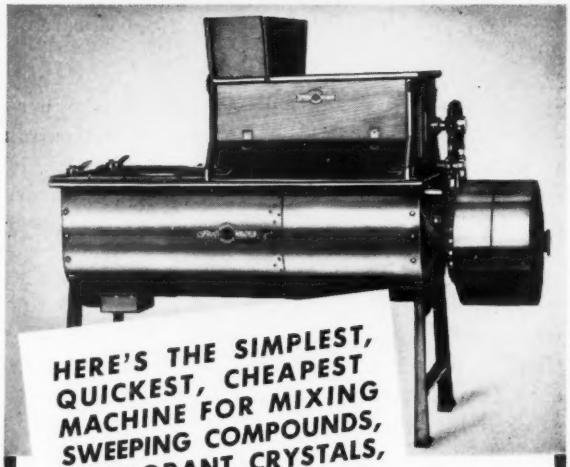
What Have You? Los Angeles County covered by six salesmen and four delivery cars. National Soap Service (Sanitary Supplies) 10210 LaSalle Avenue, Los Angeles. Need Roll Towel Cabinet.

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Complete Soap Plant Equipment for Sale: Proctor soap chip dryer; automatic soap press; wrapping machine; 4 roll stone mills; foot press; plodders 6", 8", 10"; soap boiling kettles; 6 knife chipper; two-way cutting table; frames; filter presses; crutchers; mixers; boilers. Stein Equipment Corp., 426 Broome St., New York City.

Back Copies of Soap—Bound volumes or separate copies 1935 or 1936 issues wanted. Address Box No. 652, care of *Soap.*

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Small capacity mixer designed to do its job thoroughly, quickly, economically. With or without sifter, as shown. 2½ to 15 cu. ft. capacity. *Write for specifications and prices.*
SPROUT, WALDRON & CO., INC.
132 SHERMAN STREET . . . MUNCY, PA.
MIXING, CONVEYING, POWER TRANSMISSION MACHINERY

Raw Materials and Equipment

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, on page 134 for page numbers. *"Say you saw it in SOAP."*

ALKALIES

American Cyanamid & Chemical Corp.
John A. Chew, Inc.
Columbia Alkali Co.
Diamond Alkali Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

BULK AND PRIVATE BRAND PRODUCTS

Associated Chemists, Inc. (Insecticides)
Baird & McGuire, Inc. (Disinfectants)
Buckingham Wax Corp. (Wax Products)
Candy & Co. (Floor Products)
Chemical Supply Co. (Disinfectants, etc.)
Clifton Chemical Co. (Sanitary Supplies)
Cole Chemical Corp. (Sanitary Supplies)
Curran Corp. (Detergents)
Davies-Young Soap Co. (Potash Soaps)
Empire Chem. Prods. Co. (Sanitary Supplies)
Federal Varnish Co. (Floor Products)
Fuld Bros. (Sanitary Supplies)
Harley Soap Co. (Soap Specialties)
Hockwald Chemical Co. (Sanitary Supplies)
Hysan Products Co. (Sanitary Supplies)
Koppers Co. (Disinfectants)
Kranich Soap Co. (Potash Soaps)
Peck's Products Co. (Sanitary Supplies)
Philadelphia Quartz Co. (Detergents)
Prominent Specialty Co. (Floor Products)
Geo. A. Schmidt & Co. (Soaps)
Shawmut Specialty Co. (Wax Products)
Twin City Shellac Co. (Wax Products)
Uncle Sam Chemical Co. (Sanitary Supplies)
T. F. Washburn Co. (Floor Products)
White Tar Co. (Disinfectants, etc.)
Windsor Wax Co. (Wax Products)

CHEMICALS

American-British Chemical Supplies
American Cyanamid & Chemical Corp.
John A. Chew, Inc.
Columbia Alkali Co.
Diamond Alkali Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
General Dyestuffs Corp.
Hooker Electrochemical Co.
Industrial Chemical Sales Div.
Innis, Speiden & Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Solvay Sales Corp.
Standard Silicate Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS

(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
American Cyanamid & Chemical Corp.
Baird & McGuire, Inc.
Barrett Co.
Innis, Speiden & Co.
Koppers Co.
Monsanto Chemical Co.
Reilly Tar & Chemical Co.
White Tar Co.

COLORS

Fezandie & Sperrle
Pylam Products Co.

CONTAINERS AND CLOSURES

American Can Co. (Tin Cans and Steel Pails)
Anchor-Hocking Glass Corp. (Closures and Bottles)
Continental Can Co. (Tin Cans)
National Can Co. (Cans)
Owens-Illinois Glass Co. (Bottles and Closures)
Wilson & Bennett Mfg. Co. (Steel Pails and Drums)

DEODORIZING BLOCK HOLDERS

Clifton Chemical Co.
Fuld Bros.
Hysan Products Co.
National Sanitary Chemical Co.

INSECTICIDES, SYNTHETIC

American Cyanamid & Chemical Corp.
Associated Chemists, Inc.
Rohm & Haas Co.
Whitmire Research Corp.

MACHINERY

Anthony J. Fries (Soap Dies)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
International Nickel Co. (Monel Metal)
R. A. Jones & Co. (Automatic Soap Presses and Cartoning Machinery)
Karl Kiefer Machine Co. (Filling Machinery)
Koppers Company (Coal Tar Plants, Power Plants, Valves, Castings, Pipe, Tanks)
Mixing Equipment Co. (Tanks, Mixers)
Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Sprout, Waldron & Co. (Mixing, Conveying, etc.)
Stokes & Smith Co. (Pkg. Machy.)

Raw Material and Equipment Guide

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MACHINERY, USED

Consolidated Products Co.
Newman Tallow & Soap Machinery Co.

MISCELLANEOUS

American Colloid Co. (Bentonite)
American Standard Mfg. Co. (Wax Applicator)
Anchor-Hocking Glass Corp. (Metal Caps)
Barnsdall Tripoli Co. (Pumice—Tripoli)
Dow Chemical Co. (Germicides, Agricultural Insecticides, Fumigants)
Filtrol Corp. (Purifying and Decolorizing Clay)
Garnet Chem. Corp. (Drip Machines)
General Petroleum Corp. (Naphthenic Acids)
Hercules Powder Co. (Pine Oil and Rosin)
Industrial Chemical Sales Div. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants)
Koppers Company (Coal, Coke, Roofing Materials)
Lenape Trading Co. (Waxes)
Pennsylvania Refining Co. (White Oils)
Pylam Products Co. (Lathering Agent)
S. Schwabacher & Co. (Naphthenic Soaps, White Mineral Oils)
Socony-Vacuum Oil Co. (Naphthenic Acids)

OILS, FATS, AND FATTY ACIDS

Eastern Industries
Independent Mfg. Co.
Industrial Chemical Sales Div.
Leghorn Trading Co.
Murray Oil Products Co.
Newman Tallow & Soap Machinery Co.
Orbis Products Corp. (Stearic Acid)
Wecoline Products Co.
Welch, Holme & Clark Co.

PARADICHLORBENZENE

John A. Chew, Inc.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING MATERIALS

American-British Chemical Supplies
Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer, Inc.
E. I. Du Pont de Nemours & Co.
Felton Chemical Corp.
Firmenich & Co.
Fritzsche Brothers, Inc.
General Drug Co.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Monsanto Chemical Co.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Ungerer & Co.
Van Ameringen-Haebler, Inc.

PETROLEUM PRODUCTS

Deodorized Insecticide Base, White Oils, Petroleum, Paraffine, Oils, etc.

Atlantic Refining Co.
Pennsylvania Refining Co.
S. Schwabacher & Co.
L. Sonneborn Sons

PHOSPHATES

Trisodium, Sodium Pyrophosphate, etc.

American Cyanamid & Chemical Corp.
John A. Chew, Inc.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Monsanto Chemical Works
Victor Chemical Works
Warner Chemical Co.

PYRETHRUM AND DERRIS PRODUCTS

Insect Flowers and Powder, Pyrethrum Extract, Derris Products

Associated Chemists, Inc.
Derris, Inc.
S. B. Penick & Co.
R. J. Prentiss & Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
John Powell & Co.

SILICATES

E. I. du Pont de Nemours & Co.
General Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SOAP DISPENSERS

Bobrick Mfg. Co.
Clifton Chemical Co.
Fuld Bros.
Garnet Chem. Corp.
Hockwald Chemical Co.

SPRAYERS

Breuer Electric Mfg. Co. (Electric)
Dula Mfg. Co. (Steam Vaporizers)
Fumeral Co. (Spraying Systems)

WAXES AND GUMS

Carnauba, Shellac, Candelilla, etc.

American Cyanamid & Chem. Corp.
General Dyestuff Corp. (Waxes)
Innis, Speiden & Co. (Waxes)
MacLac Co. (Shellac)
Mantrose Corp. (Shellac)
Twin City Shellac Co. (Shellac)

Professional Directory

Pease Laboratories, Inc.
Est. 1904
39 West 38th Street — New York

Chemical, Bacteriological and Pathological Testing and Research. Special Animal Investigations of Pharmacologic, Toxic or Skin Irritating Properties.

H. A. SEIL, Ph.D. — E. B. PUTT, Ph.C., B.Sc.

SEIL, PUTT & RUSBY, INC.
Analytical and Consulting Chemists
Specialists in the Analysis of Pyrethrum Flowers, Derris Root, Barbasco, or Cube Root—Their Concentrates and Finished Preparations
ESSENTIAL OILS — SOAP
16 East 34th Street, New York, N. Y.

STILLWELL AND GLADDING, Inc.
Analytical and Consulting Chemists
Members Association of
Consulting Chemists and Chemical Engineers
130 Cedar Street — New York City

SOAPS — DETERGENTS
Analyses — *Development*
Consultation — *Formulas*
Hochstadter Laboratories
INCORPORATED
254 West 31st St. — New York City

KILLING
strength of Insecticides
by PEET GRADY METHOD
PYRETHRINS in PYRETHRUM FLOWERS
(by Gnadinger or Seil Method)
We raised and killed more than 1 million flies in the last 2 years
ILLINOIS CHEMICAL LABORATORIES, INC.
5235 WEST 65th STREET — CHICAGO, ILL.

Charles S. Glickman
TECHNICAL DIRECTOR
Manufacturers Testing Laboratories
SPECIALIZING IN
Research—Analyses—Formulae—Plant Design
for
Waxes—Polishes—Soaps—Cosmetics & Leather Finishes, etc.
2 WEST 21st STREET, NEW YORK
CHelsea 2-2370

FOSTER D. SNELL, INC.
Chemists—Engineers
Every form of Chemical Service
305 WASHINGTON STREET — BROOKLYN, N. Y.

Patents—Trade Marks
All cases submitted given personal attention
Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorneys' Fees"—Free
Lancaster, Allwine & Rommel
PATENT LAW OFFICES
Suite 402, Bowen Building — Washington, D. C.

ALAN PORTER LEE, Inc.
Contracting and Consulting Engineers
Design and Construction of Equipment and Plants for Producing and Processing Fats, Oils, Soaps and Related Products
136 LIBERTY STREET, NEW YORK, N. Y.
Cable Address: "ALPORTLE", New York

PATENTS AND TRADE MARKS
Patent and Protect Your Inventions.
Expert service. Prompt attention.
LESTER L. SARGENT
REGISTERED PATENT ATTORNEY
1115 K St., N. W., Washington, D. C.

Skinner & Sherman, Inc.
246 Stuart Street, Boston, Mass.
Bacteriologists and Chemists
Disinfectants tested for germicidal value or phenol coefficient by any of the recognized methods.
Research—Analyses—Tests

Refer To Your 1939
SOAP BLUE BOOK
for F.D.A. Method for Testing of Disinfectants.
Peet-Grady Method for Testing Insecticides.
MAC NAIR-DORLAND CO.
Publishers
254 W. 31st Street — New York, N. Y.

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Every effort is made to keep this index free of errors, but no responsibility is assumed for any omission.

Why not go after the School Business Now?

No. 10-A Liquid Dispenser
No. 45 Lather Dispenser

More and more schools are making washing facilities compulsory. They are definitely partial to liquid soap because it is most economical, most convenient and most sanitary. Vacation time is when new equipment is installed, old equipment is reconditioned.

Bobrick fixtures shown here are ideal for school installations—standard with many school systems throughout the country.

Are you getting your share of this business? Do you want to get more? We have some interesting comparative cost figures that are yours for the asking. We have a sales plan that will enable you to get new soap accounts and make a neat profit on equipment. A card or letter addressed to us will bring you full details.

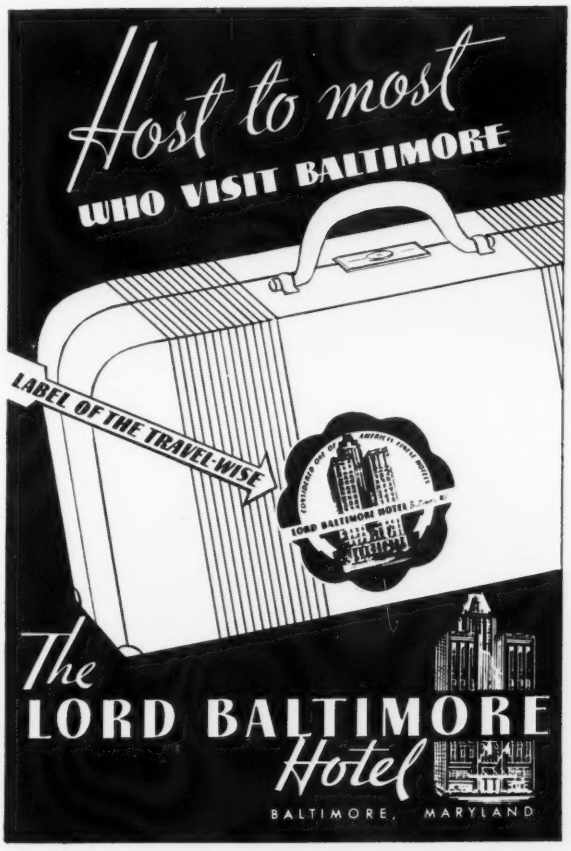
C-860 Gravity Valve
Dispenses Liquid

C-861 Gravity Valve
Dispenses Lather

BOBRICK MANUFACTURING CORPORATION

15 EAST 26th STREET NEW YORK, N. Y.

Serving the Soap Manufacturer and Jobber Only



"Before you Buy—Ask WECOLINE"

We Offer
a remarkably high standard
of purity and white color.

LAURIC
COCONUT FATTY ACID.

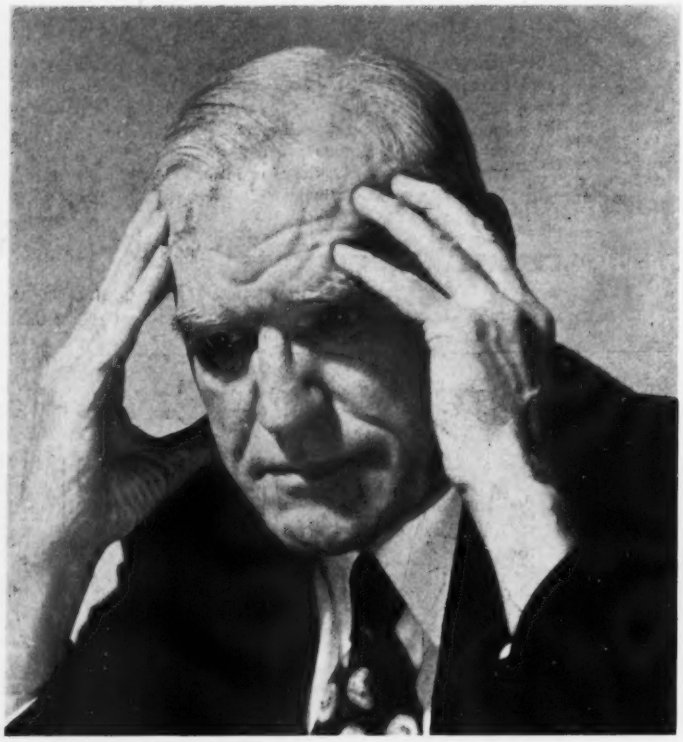
WECOLINE Products, Inc. BOONTON, N.J.
Sales Offices: NEW YORK.....CHICAGO.....BOSTON

Say You Saw It in Soap!

THE average business house receives a great many inquiries for its products or services every year which cannot be attributed to any special source. A vast majority of these probably originate from some form of advertising but, due to the general tendency toward not mentioning the names of publications, cannot be directly traced.

When you write to anyone advertising in this publication, say you saw it in SOAP. The advertiser will appreciate it—and so will we!

The Publishers



"What's That Firm?"

"Gosh darn it, their salesman was in here last week,—and I threw his card away,—and now I want a sample of their stuff, and I can't remember the name of the firm!"

Maybe this purchasing agent is trying to think of the name of **your** firm. But not if your firm is a regular advertiser in representative trade papers. Your advertising would not let him forget.

If you want to keep your company and your products everlastingly in the minds of buyers in the fields of soap products, insecticides and other sanitary products, chemical specialties, and the like,—and not give them a chance to forget you,—we suggest regular advertising in

SOAP *and Sanitary Chemicals*

254 WEST 31st STREET **NEW YORK**

Member of the A.B.C. and A.B.P.

Tale Ends

BUG trouble at the World's Fair has been causing considerable commotion. Between the Jap beetles eating up the outdoor trees and shrubs, and looper worms playing havoc with the fine air-conditioned very extra special indoor tomato crop in the Heinz-57 exhibit, General Manager Grover Whalen and his cohorts are reported in a dither. The Davey Tree people are fighting the beetles, and several eminent entomologists have been called in by Heinz to save their prize tomatoes.

* * *

And speaking of beetles,—the All-Star American-National League baseball game in New York on July 11 was almost ruined by the unwelcome presence of a host of Jap beetles,—millions of them. They got in the players' ears, eyes, mouths, and up their pants,—and told the umpires to go jump in the lake. Newspaper headline: "Beetles Baffle Baseball Batters."

* * *

In the course of the year, our editorial department handles a flock of inquiries from subscribers and others. Occasionally, these inquiries border on the freak side. However, when one of our old customers called up shortly before July 4 and asked where he could hire a Scotch bagpipe, we told him that he was going a little too far. Self-bailing spittoons and caustic soda. Yes. But, bagpipes? We told him to telephone to Glasgow.

* * *

All of which reminds us to remind you that Scotchmen save their money by taking advantage of opportunities, — such as smoking other people's tobacco, and the like. You can save *one-dollar* when you renew your subscription to *Soap & Sanitary Chemicals* by renewing for two years for five dollars, instead of the one-year rate of three dollars. It's an idea when you send in that subscription renewal check.